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ANALYSIS OF THE SALIVA OF THE HORSE.

BY PROFESSOR FRED SMITH, ARMY VETERINARY SCHOOL, ALDERSHOT.

THE following notes on the composition of the salivary secretion of the horse may prove of interest. The analysis has been made in the laboratory of this school, the saliva examined being secreted under the action of pilocarpine, which latter may explain some of the peculiarities observed respecting its sugar-converting properties :—

Analysis of the Mixed Saliva of a Horse.

Water	... ...	99·4495
Organic matter { Mucus, Albumen, Ptyalin (?) }	... ...	·2213
Ash { Soluble in water	... ...	·2677
Ash { „ in acid	... ...	·0615
		100·0000

The above saliva had a strongly alkaline reaction, its specific gravity was 1,004, it was turbid, viscid, and frothy, and deposited on standing crystals of carbonate of lime; it gave no potassic sulphocyanide reaction with ferric chloride.

In the ash was found chlorides, sulphates, phosphates, lime, magnesia, soda, and potash. The chlorides, lime, and magnesia were in much the largest proportion.

By the recognised process for extracting ptyalin I obtained, after allowing the vessel to stand two months, a very slight flocculent deposit, which it is impossible to believe was ptyalin, as this saliva was not sugar-converting.

On endeavouring to ascertain the diastatic properties of this

mixed saliva I found that it *would not* convert starch into sugar, and repeated experiments justify the conclusion that the saliva of the horse secreted under the conditions named (and probably even when formed under natural conditions) will not convert starch into sugar.

I was prepared by Lassaigne's experiments* for the fact that the parotid saliva of the horse does not possess a diastatic property, but I had yet to learn that the mixed saliva did not possess the starch-conversion power.

It may yet be proved that mixed saliva secreted by pilocarpine does not possess the power, whilst the same saliva secreted under normal conditions may possess it. On this point I am not prepared to speak.

I have worked with extracts of normal salivary and pancreatic glands to determine their sugar-forming power, but up to the present have been much dissatisfied with the results obtained.

THE ACTION OF PILOCARPINE UPON HORSES.

BY THE SAME.

PILOCARPINE is derived from the dried leaflets of the *Pilocarpus permatifolius*, and contains, according to Lauder Brunton, a volatile oil and two alkaloids, pilocarpine and jaborine; the latter has an action allied to atropine and is antagonistic to pilocarpine.

The action of pilocarpine on man, as recorded by Lauder Brunton, is to stimulate the sweat and salivary centres, producing a copious flow of saliva and profuse sweating; it also causes increased peristalsis of involuntary muscle; it is excreted by the urine and is not found in the saliva.

The action of pilocarpine on the horse is to cause in about ten minutes after a subcutaneous injection a profuse flow of saliva; the animal keeps champing his jaws constantly, whilst saliva flows from the mouth sometimes in quite a stream. *There is no attempt at sweating; the sweat glands of the horse are perfectly insensible to the action of pilocarpine.*

The involuntary muscle of the intestinal canal is stimulated, and the rectum is repeatedly emptied. With such good results, it was this circumstance which induced me to combine pilocarpine with eserine. In one case I observed a gulping sound in the throat, resembling the effect produced by aconite.

The effect of this drug on the pulse is very difficult to determine; the constant movement of the jaws induced by the flow of saliva precludes the pulse being taken there. I noticed in

* Colin. Physiologie Comparée.

one case that a horse which had naturally a very intermittent pulse, after receiving 3 grs. of pilocarpine the pulse became regular, but not increased in frequency.

The dose of pilocarpine is from 2 to 3 grs., given either by the trachea or subcutaneously. The drug is readily soluble in cold water; its effects last about two or three hours.

I have to thank Messrs. Burroughs, Wellcome, and Co., for supplying me with pure specimens of the drug for trial.

FOWL CHOLERA—POST-PARTUM HÆMORRHAGE—TORSION OF THE OS UTERI.

BY A. E. MACGILLIVRAY, BANFF, N.B.

In Fleming's "Veterinary Sanitary Science" we find an exhaustive description of this malignant disease in fowls; also several direct and indirect references to same in his "Animal Plagues"; in fact, this learned author has scarcely left any room for further observations on the subject; but having quite recently been called upon to inquire into a rather remarkable and deadly outbreak of this poultry pest, I venture to bring the same before the readers of the VETERINARY JOURNAL.

The outbreak occurred on a small farm in this district, where fifty-five poultry, mostly of the Dorking breed, were kept. Fifty-two of these occupied one common old-fashioned and very confined poultry-house—"hen-house" as we call it; the other three were in another house sitting upon eggs, *i.e.*, hatching. A nasty ditch ran round the back and west end of the poultry-house; this ditch was quite choked up, and the semi-stagnant moist contents began to ooze through the walls of the poultry-house, giving rise in the warm weather to a rather nasty smell. Observing one of the hens to be sickly-looking, the owner commenced to clean out the floor of his poultry-house, which had not been done for I don't know how long; this raised a worse smell than ever, and nothing was done to make it less. The poultry scraped and pecked away among the turned-out dirt during the day, and were shut up in the confined old poultry-house for the night. In the morning several were dead, and a couple of dozen very ill; the dead ones had apparently died on the roosts and dropped to the floor after death; one or two were, in fact, sitting dead on the roost.

On the second morning, it was discovered that *twenty-one* had died during the night; seeing this, the owner came into Banff and called for me, as he was afraid that his poultry had been poisoned. I visited the farm the same afternoon, and found all the poultry dead, except five hens.

The symptoms presented by the five living hens and those recently dead were as follows: general prostration, unwillingness to move, straddling or rolling gait, ruffled plumage; drooping, high-coloured, or even black crest, fœtid diarrhœa, light-coloured fluid fæces—but discharge from bowels at times bloody, slight protrusion of rectum in some, the protrusion congested or otherwise œdematous; a discharge from mouth nearly the same as from bowels, and on taking up one or two of the living hens by their legs, the fluid matter literally rushed from the beak; the eyes were generally much congested. These symptoms became aggravated, and the prostration increased, until death ended the scene.

I made several *post-mortems* with the following results—skin externally red, blue, and even green; occasionally protrusion of rectum; the intestines in general have a blood-shot appearance, between congestion and injection, as it were, with now and again a more aggravated state accompanied by internal erosions and ulcerations; the contents of intestines fluid and very bad smelling, being in general light grey in colour and of the consistency of thin soup; mucous membrane of the intestines much disorganised and easily scraped off, revealing at times underneath ecchymotic spots and erosions; liver and lungs very slightly affected, the former lighter in colour than usual, and the latter congested and at times solidified; the heart invariably ecchymosed externally and internally; and what struck me as most marked and constant in its appearance, was the widely-present straw-coloured effusions—wherever any loose tissue existed, there these yellowish effusions were to be found. As a rule, the blood was rather disinclined to clot.

The disease, in my opinion, was unquestionably Fowl Cholera, a most deadly outbreak; and it evidently had its origin some way or another in connection with the very insanitary state of the old poultry-house and its surroundings. I at once ordered a thorough cleaning out and disinfection of this old poultry-house; and a short time after the owner got together a fresh stock of poultry, but no reappearance of Fowl Cholera has as yet taken place.

With Delafond, I would be inclined to assert the *anthracoid* nature of this poultry malady, and the *post-mortem* appearances presented in this outbreak would seem strongly to bear out this idea.

Post-partum Hæmorrhage.

The great importance of this subject to the profession in general, renders any apology unnecessary for bringing it once

more under review. I have already, on more than one occasion, referred to the efficacy of the "Injectio morphiæ hypodermica" in such cases; but it might happen that this was not conveniently available, and as time is everything in these *post-partum* hæmorrhages, it is always as well to have two strings to one's bow. In several very severe cases, I have recently given heavy doses of spirits of turpentine with marked success, having only failed in two cases where the *collapse* was too near *before* the application of the remedy. It was a medical acquaintance who drew my serious attention to the great success in his practice, following the use of spirits of turpentine in primary and secondary uterine hæmorrhage; and this gentleman was very anxious that I would give his mode a trial, and I did so the same night on which he and I had our conversation, with decided success. Since then I have tried it several times with, as I have said, two failures—one of primary and the other of secondary hæmorrhage.

The dose of spirits of turpentine in such cases may vary from three to five ounces, and is best exhibited mixed intimately with the contents of half-a-dozen eggs and a little sugar.

Torsion of the Os Uteri, etc.

It seems from recent correspondence which I have had with several members of the profession, that this untoward complication during parturition is becoming far from uncommon. What can be the reason? A friend of mine, who recently had a very severe and unrelievable case of torsion, and who has been studying the matter with serious assiduity, suggests the idea that "the uterus might be in a twisted condition before impregnation takes place." I think this is quite an admissible idea; but when my friend proceeds to explain *his supposed* cause to be either a prolonged retention of the placenta, or rough usage at a previous delivery, I begin to feel sceptical. I admit that certain kinds or degrees of rough usage during delivery might tend towards displacement of the uterus in some form, but I fail entirely to see the connection between placental retention and "torsion." However, my friend has promised to work out the problem when he finds sufficient leisure, and I will be only too happy either to support him if successful, or knock him down if he fail to satisfy my own thoughts on the subject.

The *unrelievable* case of torsion referred to by my correspondent must, indeed, have been a very extraordinary and uncommonly interesting one. My friend and a neighbouring practitioner worked away from 8 a.m. till 5 p.m., and, being unsuccessful, finished by despatching the poor cow, a lean, miserable-looking creature,

and making a *post-mortem*, during which they found that the twist (a full one) "was firmly held or bound by ligaments and folds of peritoneum," so that no amount of any sort of *rolling* or *jamming* could or would have been of any avail.

REMARKABLE FRACTURE OF THE CRANIUM.

BY T. ASSHETON SMITH, M.R.C.V.S., CALCUTTA.

A RECENTLY imported grey Cape gelding having been saddled in his stall, was brought out on to the tan track to be mounted, when he reared and came right over, the whole weight of the fall impinging on the crest of the occiput. He was completely stunned for about half-an-hour, when he appeared to regain partial consciousness, *i.e.*, the eye became sensible to light, and he struggled violently when disturbed. He was then lying on his right side. An attempt was made to get him on his feet, but it was found, though he possessed his full muscular power, he could not, unassisted, maintain his equilibrium, and notwithstanding the fact that he was capable of sustaining the weight of his head when held in its normal position, if released it immediately turned to the right, until the nose came in contact with the shoulder, in which position it remained.

I diagnosed the case as concussion, in which the cerebellum was more particularly the seat of injury; and in view of the early return of consciousness, more or less, my prognosis was not altogether unfavourable.

The accident happened in the morning; by noon the case was evidently hopeless, and the animal gradually sank and died the same evening.

A *post-mortem* examination revealed a comminuted fracture of the sphenoid bone and basilar process of the occiput, without displacement.

Taking into consideration the surface where the accident occurred (a soft fresh tan track fully eighteen inches deep), I think the extent of the fracture, or even the occurrence of fracture, somewhat remarkable.

SYMMETRICAL PARALYSIS OF THE CRURAL MUSCLES.

BY KAY LEES, F.R.C.V.S., ARMY VETERINARY DEPARTMENT, NEWBRIDGE.

THIS case occurred at Peshawar during the month of July, just before the rains. The subject was a bay country-bred pony mare, about nine years old, the property of an officer in the garrison.

A violent hot wind was blowing from the Kyber hills, and the pony was picketed out (in the open) day and night, exposed to its full force, with the head in the windward direction.

The owner called on me early in the morning, stating that the pony was suffering from a "stroke of the wind," and that she had not been worked for a fortnight, as he had no use for her. Her feed had been half and half diet (half bran and half grain). The clothing consisted of one blanket folded into a square pad, and placed over the loins, a custom adopted for the prevention of paralysis, and to keep off the heat of the sun. On first looking at the animal, nothing was seen to attract attention, she was standing quietly, at ease, with the off hind limb flexed; the pulse, temperature, respirations, and excretions were normal, and there were no signs of pain. On attempting to lead her out, there was total inability to move forward, but she could move back with ease. On manipulation, the crural muscles of both sides showed signs of inflammation, with swelling, heat, and pain—so much so, that she would scarcely allow me to examine the parts affected. She endeavoured to get out of the way by backing, and tried to kick, the limbs being raised alternately, extended and dropped quickly, not being brought forward by the action of the crural muscles.

The treatment adopted was simple. Placed the patient in a sheltered position; fomentations and *cataplasma sinapis* to the regions affected; laxatives, etc.

In a few days the inflammation subsided, and with it a speedy recovery took place.

Editorial.

THE ANNUAL MEETING OF THE ROYAL COLLEGE OF VETERINARY SURGEONS.

The annual meeting of the profession does not call for much remark this year. The members who last year caused the meeting to be somewhat of a noisy gathering were conspicuous by their absence, only one or two appearing to show that they were still in existence. The year's labours of the Council did not seem to afford much scope for fault-finding by those whose genius lies chiefly in that direction; there were no attacks by rowdy students upon the examiners, nor slanderous and unfounded utterances by their teachers, to dilate upon. The events of the twelve months have not been remarkable, except for the introduction of changes in the manner of examining students, which many of those whose opinions and experience entitle them to a hearing consider of a retrograde character, and likely to be detrimental to that professional progress which is so essential to our well-being. Much dissatisfaction had been felt, both at the meeting and in the Council, at the result of the dispute with the trustees of the Dick College, in regard to the disturbances attributed to the initiative of the students of that institution. There is a feeling that the honour of the Royal College has been overlooked in the desire to procure peace, and that the conduct of the Dick College trustees and their advisers should have been inquired into and exposed. The position of the Royal College in the matter was unassailable, and should have been maintained. It is felt in some quarters that it has been surrendered in order to spare the Scotch trustees, who do not appear to have acted with that sense and judgment which one would expect in persons placed in their responsible position. But perhaps the old motto may be accepted here, and that out of evil good may come. The disgraceful incident in Edinburgh is not likely to be repeated for some time, it is to be hoped; and it has certainly had the effect of impelling those who preside over the Clyde Street School to send its students before the examining board in a more creditable condition, mentally and physically. For this the trustees should be very grateful to our Corporation, and we hope they will acknowledge the service rendered.

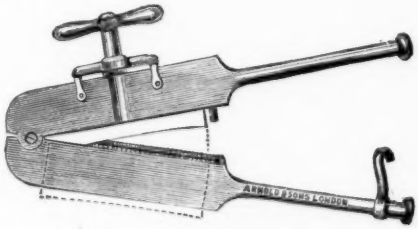
The annual dinner of the profession, held on the same day as the meeting, was a great success in every way. The large number of distinguished guests and visitors present gave it a lustre and tone which did much to encourage those who are striving for the elevation of veterinary medicine in this country to redouble their efforts, notwithstanding the grave obstacles they have to encounter in and out of the profession. The words of the illustrious duke, who may be said to have been the guest of the evening, were especially congratulatory and satisfactory. There are perhaps none who are in a better position than His Royal Highness to judge of the value of the services of veterinary

surgeons, for he has taken a particular interest in the work of the Army Veterinary Department of late years; and from his official position since he first joined the service—more than half a century ago—he has had constantly before him the progress that was being achieved. As no one is more careful and deliberate in expressing his views and opinions, we may accept his estimate of our profession as that of one entitled to the utmost confidence and respect, and who would not offer a word of praise if praise were not thoroughly deserved. The remarks of Lord Harris and Colonel Kingscote were equally encouraging, and are evidence that veterinary science never stood so high in this country as it now does.

The votes of the profession, in and out of Red Lion Square, prove that it is sound at heart, and resents the intrusion of those who would fain cause disunion and disturbance, in order to further their own personal ends or indulge their rancour and narrow-minded jealousy at the expense of the entire body. So long as the profession acts in this manner, its welfare and safety are assured.

NEW CASTRATING INSTRUMENT.

Mr. James Webb, M.R.C.V.S., of Bishop's Stortford, wishes to call the attention of the veterinary profession to a new castrating instrument which he has invented, and calls by the name of "Emasculator." It has been manufactured and patented by Messrs. Arnold and Sons, of West Smithfield, London. An engraving of it is given below—



Mr. Webb has been a castrator for upwards of twenty years, and prefers this instrument to all others he has used—namely, clams, cautery, torsion, and ecraseur—as being the simplest, quickest, and most humane. It is light, and yet very strong, and is never likely to break, or even get out of order. It effectually prevents hæmorrhage from the spermatic artery, by severing it with its blunt and round-edged blade. Moreover, it is not expensive.

It consists of two flattened double halves of steel, connected at one end by a hinge or joint, while extending from the other end of each half is a rounded handle, which fastens them with a slide. Between each of these two double halves of steel is a narrow space, through which a rounded-edged blade passes, being propelled by a screw contained within a T handle, which is fixed at the upper border of one of the halves.

Mr. Webb further writes to say that he has received such a number of letters

from veterinary surgeons asking for particulars as to the manner of using the emasculator, that he gives the description in detail :—

After casting and securing the animal, which I hope to do without his sweating, I open the scrotum with the knife, and having opened the handles of the emasculator (the blade of which is already in the upper half of the instrument), I place it on the spermatic cord at a right angle, just above the epididymis, then nip the handles together and secure them *very tightly* with the slide, taking care not to include any portion of the skin of the scrotum within their grasp, and keeping the instrument close to the body, so as not to drag upon the cord in case the animal struggles. I now gently turn the handle of the blade-propeller until the blade has gone to its furthest extent; then turn the handle the reverse way until the blade is home again in the upper-half of the instrument; now push up the slide, open the handles, and carefully remove the testicle and cord from the instrument with the fingers. I then proceed in like manner with the other testicle, and liberate the animal, which, as a rule, is not down more than two or three minutes. When he rises, I prefer him remaining quite quiet for a few hours, and food be given to him. If the spermatic cord is thick, I sometimes screw the blade down and back again a second time, previously tightening the slide.

As the edge of the blade of the emasculator is rounded and quite blunt, its object being to stretch or squeeze the cord asunder, and not to cut it, it sometimes happens that a portion of membrane is not quite severed, if so, I close the handles again and break the membrane with my fingers, or cut it; then open the instrument again and remove the cord carefully from it with my fingers, if found attached.

When I first used the emasculator, I divided the cremaster and vas deferens with the knife, previous to placing the vascular portion of the cord in the instrument, but in one case hæmorrhage ensued. It was slow, but lasted several hours, I suppose from the artery of the cord being of unusual size. Since then I have generally included the whole of the cord in the emasculator. With large calves and bulls, I always sever the cremaster and vas deferens with the knife before applying the instrument. In young calves the knife above is sufficient. At present, I have not operated on anything above two years old with the emasculator, excepting one four-year-old pony; nor have I tried it upon rams; but should not hesitate to castrate horses at any age with it. I always cast animals for castration, but those who prefer doing it in the standing position will, I think, find the emasculator very handy.

The advantages I find in castrating with the emasculator are—the operation is so simple and quickly performed, especially after the operator has used it a few times. It evidently causes but little pain to the animal at the time, or afterwards. There is scarcely any hæmorrhage, which is not the case in my experience with the écraseur. No fire is needed, as when the cautery is employed. It is much quicker than the wooden clams or torsion. I never have occasion to visit, much less interfere with, a colt after castration; but am told by the owners in many cases that "they would hardly have known their colts had been castrated," the swelling being so very slight. Of course, they are allowed plenty of room for exercise, either in a barn, yard, or meadow.

Precautions.—Never attempt to open or close the handles of the emasculator unless the blade is home in the upper-half of the instrument. Wipe the instrument immediately after operating; the blade can be screwed out when the handles are opened, and the grooves are easily cleaned by inserting the blade of a knife covered with a piece of rag, and rubbing it inside until dry. Then oil the blade and thread, and replace it in the instrument.

Messrs. Arnold and Sons are the sole manufacturers of the emasculator.

INOCULATION EXPERIMENTS AND THE CRUELTY TO ANIMALS ACT OF 1876.

On the 24th May, the Lord President of the Council, with whom were the Home Secretary, Mr. C. L. Peel, C.B., and Professor Brown, C.B., received an influential deputation from the Royal Agricultural Society of England and the Royal Veterinary College, to draw attention to the difficulties experienced by stockowners and veterinary surgeons with reference to the protective inoculation of animals of the farm against Anthrax and other contagious diseases, owing to the interpretation placed by the Home Office upon the Cruelty to Animals Act of 1876, and to urge upon the Government the introduction of a bill exempting veterinary surgeons from the provisions of this Act when there is a *bona-fide* intention of doing good to the animals and preventing suffering.

The Royal Agricultural Society was represented by Sir Matthew White Ridley, Bart., M.P. (President), Earl Cathcart, Lord Egerton of Tatton, Mr. Sanday, Mr. Jacob Wilson, and Mr. Ernest Clarke (Secretary); the Royal Veterinary College being represented by Colonel Kingscote, C.B. (Chairman of the Governors), the Right Hon. E. Marjoribanks, M.P., and Mr. R. B. Berens.

Sir Matthew Ridley, in introducing the deputation, said they had come before the Lord President in consequence of the interpretation which had been placed by the Home Office upon the Cruelty to Animals Act. They did not dispute the legality of such interpretation, but there was a real practical difficulty which was standing in the way of ordinary operations upon domestic animals of the farm, because it appeared that unless there was absolute certainty about the effect of an operation, it was illegal. Lord Egerton would explain the difficulty in detail, and would state what had happened in the case of his own herds.

Lord Egerton of Tatton said he wished to lay before the Lord President certain facts with regard to the practical operation of the Vivisection Act, as it affected agriculturists at the present time. Their herds were very liable to attacks of Quarter-ill, Anthrax, and Swine Fever. In the case of all those diseases, they believed that by inoculation the diseases could be, to a very great extent, prevented. In having his own herd inoculated, he had no intention of infringing the Vivisection Act. He understood the Act applied to laboratory experiments, and he had put to himself this question, What was an experiment? when did an operation cease to be an *experimentum in corpore vili?* When he, believing that inoculation for Quarter-ill would be efficacious, submitted to it fifty-six of his young stock, it was certainly not as an experiment in the Parliamentary sense of the word, but with a belief that it would be efficacious. Inoculation had not before been tried on so large a scale, and he, being then President of the Royal Agricultural Society, had these operations carried out in order that agriculturists might see whether these so-called "experiments" were successful or not. If he had thought that all these animals would have died, he would never have submitted them to Professor Penberthy. Professor Penberthy had to be summoned at a moment's notice, because it was necessary that an animal should be inoculated with fresh virus. If inoculation became general, local veterinary surgeons would perform the operation; but, in the first instance, it was necessary that these experiments should be carried out with the best advice and by the most scientific men. He had previously heard that these experiments had been carried out at Major Percy's farm at Hodnet, and he believed the experiments on his own farm would be as successful. Four animals died very shortly afterwards, probably on account of some want of skill on the part of the operator, or because he did not have sufficient veterinary assistance. The remainder so inoculated had been protected from Quarter-ill ever since, whilst,

in November last, to his very great loss, two valuable calves died from the disease, which were not old enough to be operated upon when the rest of the herd was inoculated. All the other animals up to the present time had been free from the disease, and it was very desirable that these experiments should be carried out on a large scale. Unless he had been stopped by the Home Secretary he should naturally have tried again what was popularly called an "experiment," but which, in his case, was simply a veterinary operation.

Lord Egerton then detailed the circumstances in relation to the action taken by the Home Office in the case of Professor Penberthy, which were as follows:—"On October 6th, 1887, Professor Penberthy received from the Home Office a letter drawing attention to an abstract of the report published by the Royal Agricultural Society, 'from which it would appear that certain experiments such as could not be performed without a licence from the Secretary of State under the Act 39 and 40 Vic., cap. 77, were performed by you. As no such licence has been granted you, the Home Secretary desires to know if you have any explanation to make in the matter.' Professor Penberthy replied asking for a personal interview. This request was refused, and he wrote saying he was assisting Professor Robertson, who held a licence for the purpose. On November 16th, he received a letter from the Home Office, stating that 'the Home Secretary was satisfied that many, if not all of the operations performed by you, which have been called in question, were performed contrary to the law, and that you rendered yourself liable to criminal proceedings. Neither the plea that you were acting as Professor Robertson's assistant, nor the plea that the operations were not experiments to which the Act applies, can be entertained. But for the lapse of time which has taken place, the Secretary of State would have directed a prosecution, and you must strictly understand that, in case of any further neglect to conform with the law, you will be immediately prosecuted.'"

It was in consequence of the action of the Home Office that Sir Matthew Ridley and himself had had an interview with the Home Secretary, and he (Lord Egerton) wrote to the Home Office a letter, to which he received the following reply:—"The distinction has hitherto been drawn and upheld in dealing with inoculations and the application of the Cruelty to Animals Act, 1876, that if the inoculations are performed with a *bona-fide* belief in their efficiency in order to produce a practical result, viz., the prevention of disease in a particular case—they constitute simple veterinary operations, but if performed with a view to test or verify a theory, they constitute experiments under the Act, for the legal performance of which a licence is necessary."

This interpretation implied a personal belief by the operator that the operation was going to be successful. Professor Brown had remarked that there were other veterinary operations which were of doubtful efficacy, such as rowelling and firing. If the Home Secretary's argument applied to the latter, no horse could be fired. Many veterinary surgeons did not "believe" in its efficacy, and therefore firing should be stopped. If the law was as it had been interpreted, they thought that there should be some alteration in the Act which would enable these operations—which they believed were absolutely necessary for the protection of animals from disease—to be carried out in the field, either by an ordinary practitioner, or by any one coming from London; and this not only in order that veterinary science might be extended, but that the animals might be kept alive. During the ensuing summer hundreds of animals would die from Quarter-ill, and owners of stock would be prevented from adopting the remedy of inoculation, unless the law were amended. They did not desire any relaxation of the law as regarded the abuse of vivisection, or in any way to diminish the restrictions which at present exist in regard to the performance of experiments in a laboratory or upon inferior animals.

Inoculation experiments were just as *bona fide* as the firing of an animal, although they might not in the first instance have been tried so long as that there could be actually said to be a certainty of success. The operations were as likely to succeed as were many other operations which were performed by veterinary practitioners. They believed that if the law stood as at present, it would be perfectly impossible for any improvement in veterinary science to take place. They contended that it should be made clear that stockowners could on their own responsibility be allowed to carry out these experiments. The law had been strained in a way which he believed it was never intended to be. He (Lord Egerton) certainly never for a moment imagined that this would be the effect of the Act, or that it would be applied in such a way. The case of Swine Fever was one with which he was not personally acquainted, but Professor Brown had been endeavouring to carry out experiments which he believed would relieve us from this dreadful curse. The county rates were burdened with enormous sums for the slaughter of animals, and they were most anxious that something should be done if possible; but the law, as it was at present, stood in the way of any improvement.

The Royal Agricultural Society wished that this matter should be cleared up, and that operations of this kind, performed at the risk of the owner, should not be classed as experiments within the meaning of the penal clauses of the Act. He spoke as one largely interested in agricultural operations, and as knowing the feeling of agriculturists throughout the country. He did not wish to break the law or to go to law, but to have the law altered.

The LORD PRESIDENT said he had not looked into the legal aspect of the case, but he understood that in the case referred to by Lord Egerton, the principal object had been the safety of the animals.

Lord EGERTON said that was so, but Professor Penberthy's action had been arrested by the Home Office, and owing to the state of the law no veterinary surgeon would perform these experiments for fear of the legal consequences.

Professor BROWN said that from a scientific point of view he quite sympathised with the object of the Deputation. Scientists were generally agreed that the Home Secretary was right in his interpretation that whatever was done for the purpose of testing anything was really an "experiment." When he (Professor Brown) had got to a certain stage in the laboratory with reference to Swine Fever, he thought that injection of a particular fluid into the skin of a pig would most probably prevent Swine Fever. He had written to the Home Secretary to know whether such experiments could be carried out by veterinary surgeons without a licence, and had been answered in the negative.

His contention was that in the inoculation experiments such as had been described, the operator proceeded, not with a *bona-fide* belief (he had not it himself), but with a *bona fide* intention to benefit the particular animals upon which he operated. Whenever the proceedings were for the cure of disease or protection of the animal, they could not strictly be called an "experiment" in vivisection. At the same time he felt perfectly justified in stating his conviction that such experiments were within the meaning of the Act as it now stood, and he would not think of performing them unless he had legal authority for doing so.

He thought they would meet with general agreement that veterinary surgeons should be put in the same position as medical practitioners, who inject new medicines under the skin of their patients to see whether they would cure or not; but if a veterinary surgeon heard of a new medicine, and wished to try whether it would be useful to the animal kingdom, he could only proceed by a licence from the Secretary of State. He thought that the matter should be considered in that light, and that veterinary surgeons and medical men should be placed in exactly the same category—in other words,

that the experiments named in the first section of the Act of 1876 should not apply to practitioners when they proceeded in the ordinary course of their profession and when they had a *bona-fide* intention of benefiting the animal upon which they operated.

The HOME SECRETARY said the difficulty all arose from the use of the word "experiments." The Act did not define the word "experiment," and he therefore tried to put a rational meaning upon it. What he endeavoured to convey in his letter to Lord Egerton was the distinction between the word "experiment" and the word "treatment." In the case referred to he had based his action upon a report, from the perusal of which he collected that the operations fell not within the class of treatment, but of experimemts—*i.e.*, endeavouring to find out what a particular experiment would result in. Professor Brown had agreed that the word "experiment" must at least go as far as he (Mr. Matthews) had indicated—that there must be a belief that the operation would produce a cure, in which case it would become treatment. But if there was a *bona-fide* desire to benefit the animal, without any belief or knowledge one way or the other, he thought that ought to take the operation out of the class of experiments. This was, perhaps, a very refined and delicate distinction, and he confessed there was a little difficulty in dealing with it. In considering the particular operations mentioned by Lord Egerton, some did not appear as experiments, but were treatment; but some of the operations (the earlier ones) were clearly experiments, and performed avowedly as experiments, though under colour of a licence.

LORD EGERTON pointed out that no veterinary surgeon, after what had occurred, would run the risk of incurring a penalty of £50. They wanted the law changed, as it was evidently not clear. What they asked the Government to do was to make such an alteration in the law as *would* make the matter clear.

Colonel KINGSCOTE said that their object in coming there was to get the nice distinction in the present Act of Parliament altered. As agriculturists they wanted, if possible, to have their flocks and herds treated so that they might be freed from disease.

The LORD PRESIDENT thought it was to be regretted that there had not been an attempt to get a legal decision on the point in a Court of Law. Personally he might express the opinion that where a man, with a reasonable chance of success from knowledge which he had acquired in his profession, treated an animal with a view of saving its health, he was doing that which primarily must be inoffensive, and in accordance with the fair exercise of his profession. He did not believe that any Court would hold that there was anything in the meaning of the Act to prevent the operator doing this. Where a man was still groping in the dark, his operations were experiments; but where there was a reasonable amount of unanimity in the profession about the means of cure, then he thought no Court would class such operations as "experiments" within the meaning of the Act. All he could promise was that his Department would give the matter careful consideration, and see if any way out of the difficulty could be found. No decision upon the Act had yet been made, and it was very difficult to bring forward new legislation without some positive decision of the Courts that such legislation was necessary.

Sir MATTHEW RIDLEY having thanked his Lordship for his courtesy, the deputation then withdrew.

CAPRINE AND OVINE VARIOLA.

THE contention that each species of animal has its own form of Variola, which manifests itself in never-changing features under all circumstances, and does not undergo transformation—as opposed to the notion that one

kind of Variola (human Small-pox) will become for ever converted into another (Cow-pox)—receives further support from the note published by M. Bremond in the *Journal de Med. Vétérinaire et de Zootechnie.* MM. Miquet and Jausseaume have observed outbreaks of Variola among flocks of goats in Algeria, and at the same time flocks of sheep grazing along with them remaining absolutely free from the disease. These two veterinary surgeons have inoculated sheep and goats with matter from the pustules of a sick goat; but the result has been negative, so far as the sheep were concerned, though, with the goats after the third day there were magnificent flocks.

M. Bremond himself introduced among fifteen sheep severely affected with Sheep-pox, nine goats, young and old, male and female. After the closest cohabitation for sixteen days, all the goats remained unaffected, not the faintest trace of Variola having been detected among them. Some days afterwards, with the contents of some very fine variolic pustules from a sheep, he inoculated three of these goats, as well as five Spanish goats just arrived from Spain, and which therefore had not been in contact with the flock of sheep. But here, again, the result was completely negative.

On these grounds Bremond comes to the conclusion that Goat-pox and Sheep-pox are two quite distinct morbid entities. On the Algerian pastures sheep and goats graze and live together, and when the former are affected with Variola no precautions are taken with regard to the latter, and *vice versâ*.

That the disease cannot be transmitted at all from one to the other species is perhaps too absolute a conclusion to arrive at, however; for in the *Revue Vétérinaire* for 1883, Professor Peuch states that he had successfully inoculated Sheep-pox in a goat, though certainly the consequences were remarkably benignant. And similar experiments had been previously made by Hering and Hertwig, Kercten and Gerlach, with the result that the malady could be readily conveyed from sheep to goats, producing in these a real Variola which could be re-transmitted to sheep. In the goats the pustules were smaller and the general malaise much less. Contagion by cohabitation was difficult, and it was often noticed that goats could live among sheep during a severe outbreak of Variola without been involved. Hering, nevertheless, has had fifty-four goats placed in such circumstances, and ten took the malady.

THE BROWN INSTITUTION.

THOSE who are sceptical regarding the work done at the Brown Institution, observes the *Lancet*, should read the report for 1887 compiled by the Professor Superintendent, Mr. Victor Horsley. It will be seen that the benevolent wishes of the founder are faithfully observed, and that, as hitherto, many important scientific investigations have been carried on. To some who, as Professor Horsley says, spend money in "wanton and mendacious abuse of the Institution and its work," it may be a revelation that no fewer than 3,850 "patients" were treated therein during the past year. Perhaps the misconception of the work of the Institution prevalent in some quarters has been partly owing to the reticence hitherto kept regarding its hospital side. Now, thanks to a resolution moved by Sir W. Gull, further details respecting the hospital work are to be given in the annual reports. Professor Horsley points out that the hospital records are incomplete owing to the fact that a large number of cases are only brought once to the Institution, and also because there is no clinical clerk appointed to keep the records. He appeals for help to the public to support this benevolent enterprise, and we cannot but feel the force of his suggestion that this would be a far more

worthy channel for donations than the cause of "anti-vivisection," which has never ceased to impugn the work of the Institution. It is noteworthy that during 1887 only one case of Rabies was treated, and, notwithstanding that, more dogs were admitted than usual. This scarcity of Rabies is attributed by Professor Horsley to the operation during the previous year of the police restrictions as regards muzzling and the destruction of stray dogs. He emphasises the value of these restrictions by reference to the fact that whilst they were in force that highly contagious malady "Distemper" was also much diminished; but that, since the restrictions have been removed, a great increase in cases of Distemper appears in the hospital records, the short incubation period of that disease accounting perhaps for its reappearance at an earlier period than that of Rabies. He also alludes to the regrettable fact that the results of surgical operations are far less favourable than they would be if the hospital were provided with the means necessary for carrying them out on the strict antiseptic principles essential to success. Mr. Batt, the veterinary surgeon, furnishes statistical tables of the number and kind of cases treated during the year. From these we learn that 2,116 horses, 1,023 dogs, 272 cats, were treated as patients; that the total number of in-patients admitted amounted to 242, of whom 186 were discharged cured or relieved. A large variety of diseases and injuries were dealt with, including 162 cases of Distemper, 9 of Glanders and Farcy, 121 of Tubercle, 29 of Chorea, 13 of Epilepsy, 5 of Tetanus, 118 of Croup, etc. The importance of the Brown Institution as a pathological laboratory could not be better shown than in the record of the researches carried on there during the past year. Seldom have so many taken advantage of the opportunities afforded by the Institution for the prosecution of inquiries that have a direct bearing upon medical science. The scientific work pursued under the direction of Dr. Klein on behalf of the Medical Department of the Local Government Board is carried on here, and Professor Horsley recapitulates the investigations of Dr. Klein, Mr. Lingard, Dr. W. R. Smith, and Dr. Wooldridge, which include the memorable inquiry into Scarlatina and other subjects already reported. Besides these Governmental researches, many subjects of considerable interest have been investigated. That of Rabies demands chief notice. Professor Horsley has conducted an extensive inquiry upon this disease, in which he substantiated the results obtained by M. Pasteur. This confirmation was announced last year in the report of the English Commission, but a full account is proposed to be presented to the Pathological Society. The outbreak of Rabies among deer in Richmond Park during 1886-7 was investigated by Professor Horsley: first in the inoculation of rabbits with portions of the medulla from two of the affected animals, whereby the diagnosis of Rabies was fully confirmed; and then by the observation of four affected animals sent to the Institution from the park. They exhibited the characteristic symptoms of furious Rabies, and, as usual in that form, the fatal issue was preceded by progressive Paralysis, beginning in the hind limbs. Professor Horsley says that "there is no doubt that this serious outbreak was a simple consequence of the height to which the disease has been allowed to rise before the present legislation, commencing at the end of 1885, produced its effect in 1886." The value of M. Pasteur's method in the diagnosis of Rabies is shown in a table supplied by Professor Horsley of twenty-three cases, in eighteen of which the diagnosis was confirmed by the employment of this method—that, namely, of subdural inoculation. It is to be regretted that, owing to our restrictive legislation, this test is not available by the veterinary surgeon in his daily practice. The subject of Rabies has also been investigated experimentally by Mr. Dowdeswell, who, besides confirming M. Pasteur's statements, found that in an infected animal the tissues do not become virulent till towards the close of the inoculation period, and that none

of the numerous drugs tried on the rabbit had any constant effect on the result of infection. The report contains mention of several experimental inquiries into the pathology and physiology of the nervous centres. Mr. Ballance and Dr. Hadden have been engaged in experiments on the motor area of the cortex of monkeys. Professor Horsley and Dr. Beevor, in continuation of researches commenced in 1885, "with the view of elucidating some of the phenomena of Epilepsy and Paralysis," have pursued three lines of inquiry. The one is into the localisation of motor function in that portion of the spinal cord which gives origin to the nerves forming the brachial plexus. This is still in progress, and publication of results is deferred until certain points of minor importance that have been observed can be fully explained. They have continued to analyse minutely the representation of movements in the so-called motor region of the cortex, studying during 1887 the part around the upper limb area above and in front, and the results obtained will doubtless go far to clear up the order of phenomena of the Epileptic fit. A third line of experimental investigation undertaken by these gentlemen was to trace the arrangement of fibres in the internal capsule by means of faradisation of parts one millimetre apart. So far as they have gone, they have no doubt that the fibres are arranged in the same relative order and position as the centres projected on the cortex cerebri of the same hemisphere. Dr. Mott is engaged in investigating by experiment certain obscure diseases of the spinal cord, and has already shown the course taken by ascending degeneration after limited destruction of the roots of the cauda equina. Remarkable osseous trophic lesions followed in the leg of a case where the anterior nerve roots had been divided. Of other inquiries carried on at the Brown Institution, some are already known to the profession, others will shortly be brought before notice, and others are still in progress. They include the investigation respecting Micro-organisms in Healthy Tissues, by Mr Ballance and Mr. Shattock, that on the Ligature of Arteries, by Mr. Ballance and Dr. Edmunds, and one on the Infectivity of Tetanus, by Mr. Ballance and Mr. Lingard; an Inquiry into the Treatment of Tubercular Disease of Joints, by Mr. Watson Cheyne; one into Paralysis of the Recurrent Laryngeal Nerve, by Dr. Clarke; an investigation upon Puerperal Fever, by Dr. W. R. Smith; Dr. Wooldridge's experimental production of Hæmorrhagic Infarction of the Liver; and further research into Epilepsy and Myxœdema, by Professor Horsley. No one will venture to deny that the Brown Institution is an active centre of scientific work, or that the subjects there dealt with are worthy of the attention bestowed upon them.

Proceedings of Veterinary Medical Societies, &c.

ROYAL COLLEGE OF VETERINARY SURGEONS.

Forty-fifth Annual General Meeting.

Held at Red Lion Square, Monday, May 7th, 1888.

Sir Henry Simpson, the President, in the Chair.

Present:—Nicholson Almond, George A. Banham, J. D. Barford, Thomas Barker, A. W. Barnes, T. G. Batt, W. G. Boswell, Thomas Briggs, James Broad, James Hall Brown, sen., G. T. Brown, C.B., J. McCall, B. Cartledge, John J. Cheeseman, F. P. Collings, J. Roalfe Cox, C. Dayus, John A. W. Dollar, Thomas A. Dollar, William W. Dollar, Edward Coleman Dray, W. Duguid, John Evans, J. Fraser, Sir F. W. Fitzwygram, Dr. G. Fleming, C.B., J. Gibbs, H. D. Gibbings, G. H. Golding, Thomas Greaves, William John Hatton, Woodrofte Hill, S. G. Holmans, H. W. Hooper, Tedbar Hopkin, William Hunting, George Hurford, J. Sutcliffe Hurndall, A. Jacobs, John C. James, H. Kidd, T. A. Killick, A.V.D., James Lambert, A.V.D., Arthur Leather, Clement Lowe,

J. Irvine Lupton, J. Mackinder, W. A. Morgan, A.V.D., W. J. Mulvey, Frank T. Oatway, Harry Olver, C. Phillips, A.V.D., William Pritchard, George Reddish, W. Reekie, James Reilly, A.V.D., Alex. E. Richardson, A.V.D., H. G. Rogers, William Roots, Charles Rose, James Rowe, Captain Benjamin H. Russell, F. G. Samson, E. S. Shave, William Shipley, sen., J. F. Simpson, H. M. Singleton, Sydney H. Slocock, H. W. Stevens, J. H. H. Stidson, Robert C. Trigger, F. Walker, W. B. Walters, Richard Whitwell, A. C. Wild, William Wilson, W. T. Wilson, J. Woodger, J. A. Woods, W. Woods, F. W. Wragg, G. Thatcher (Solicitor, *ex-officio*), and A. W. Hill (Secretary).

The SECRETARY read the notice convening the meeting.

The CHAIRMAN declared Dr. Fleming, who had received 910 votes, Mr. Greaves, who had received 764, Professor Williams, who had received 741, Professor Pritchard, who had received 709, Mr. J. F. Simpson, who had received 679, Professor Brown, who had received 549, and Professor McCall, who had received 518, duly elected to the Council.

The CHAIRMAN drew lots to fill the place of Professor Robertson, and declared that Professor Pritchard would take the place of Professor Robertson.

Mr. JAMES SIMPSON moved, "That the minutes of the last general meeting be taken as read."

Mr. CARTLEDGE seconded the motion.

The motion was carried.

Mr. DRAY moved, "That the annual report be taken as read."

Dr. FLEMING seconded the motion.

The motion was carried.

The CHAIRMAN, in moving the adoption of the report, said sections 5, 6, and 7 related to the bye-laws and the rules of examination; they gave the names of the new Examining Board, and stated the number of students who had been up for examination. The new bye-laws had been made and the Examining Board appointed by a Council which consisted of Examiners, of teachers, and general practitioners. They had had a very harmonious time in arranging the new order of things, and he hoped and believed that a very happy state of things reigned in the profession generally. By the death of Professor Robertson the profession had lost a very valuable man—one who lived for the profession, and one whose loss would be sincerely regretted. The Council had taken every step they could to show honour and respect to his memory. There was a suggestion that the College should be declared out of debt. Roughly speaking, the College had cost £6,000, and considering that about £4,500 had been raised by members and from legacies, he thought it very desirable that the College should pay off the remaining £1,500 and be declared out of debt.

Dr. FLEMING seconded the motion for the adoption of the report.

Mr. DOLLAR said the Council had had a very heavy task in the year which has just passed, because in addition to the ordinary business of the profession they had to appoint a new Examining Board, and to entirely revolutionise the system of examination, and he congratulated the President on the manner he had conducted the business of the Council. Discontent raged so high last year that a split in the profession seemed imminent. Many members felt strongly that no member of the Council ought to be allowed to be an Examiner. That subject had not been taken into the consideration of the Council as it deserved. The Council ought to have complete control of the Board of Examiners, but that was impossible so long as seven or eight Councilmen were Examiners. It was altogether against human nature to find fault with what one did one's self, and that was and must be the position of the Council so long as members of it maintained their seats in the Council and acted as Examiners. He proposed, "That in the opinion of the members of the profession here present it is wrong in principle for a member of Council to act as an Examiner."

Mr. HURNDALL had much pleasure in seconding Mr. Dollar's motion. There was a very strong feeling amongst those with whom he had had any conversation upon the matter that those who occupied positions on the Council voted for themselves to become Examiners, and thus the Examining Board was confined to a small circle. He thought it was a very lamentable state of affairs if, out of a body of something like 2,800 or 3,000 members, there were only between sixteen and twenty men competent to undertake the work of Examiners. He thought it was the wish of the profession that those who constituted the Council should not have the opportunity of being members of the Examining Board. If one member of the Council voted for another, they could not complain of each other.

Mr. BRIGGS said that Mr. Banham, who was known as an examiner, had received 445 votes. How did Mr. Hurndall account for that?

Mr. HURNDALL said that 445 was a very small proportion of 2,800 or 2,900, and it might be that a great number of those gentlemen who had voted for Mr. Banham had not taken the matter into account.

Mr. WILLIAM HUNTING said that the College Library ought to be improved. He had been interesting himself on the subject of hereditary diseases, and having five minutes to spare he turned over a book labelled "Pamphlets," and in it he found, bound up with a lot of others, a pamphlet by Professor Law, which was the best article he had ever come across on the subject. The number of votes which had been given and the number of circulars which had been sent out showed that greater interest was being taken in the election of members of Council. He would propose that for the future in the voting-papers sent out, the names of proposed members of Council should be arranged alphabetically. The greatest alteration that had been made by the Council had been in reference to the Final examination. Formerly, if a man were rejected either in his Oral or his Practical examination, he had to go back again, and go through the two. Now, if a man passed his Oral examination, he could go to his Practical, and if rejected at his Practical he could go to a practitioner and learn it, and the next time he went up he need not go for the Oral.

Mr. KIDD held that no members of the Examining Board should have a seat on the Council. That, however, did not so much depend on the Council as on the profession, who had the power of election. Members ought to have a circular from every candidate stating what he would do and what he did not intend to do. Clause XI drew attention to the "Veterinary Surgeons Act." The original charter gave members of the College the sole right to the title of veterinary surgeon. The Council who had to do with that Act going through Parliament let that title slip, or at least divided it between members of the College and those who had no right to it; and that had done the members an immense amount of harm. Clause XVI drew attention to the *Annual Register*. At the last meeting the Council gave a distinct promise that the disgraceful proceedings at Edinburgh should be investigated and a report presented to that meeting. There was nothing about it. He did not think anything had been done. He begged to move, "That the Report be not adopted, and that a committee be appointed to investigate this matter."

Mr. LUPTON agreed with Mr. Dollar that members of the Council should not be elected Examiners. He did not think any professor or teacher ought to be an Examiner. If they had control of the schools they would have control of the teachers at that school. During the past twenty years the veterinary profession had made very much progress socially, educationally, and in every other way. Lately a member of the profession had been knighted, and two members had been made C.B.'s. Honours had been conferred upon the profession, as well as upon the members themselves.

Mr. LEATHER suggested that members should announce any change in their address.

Mr. WOODROFFE HILL asked two questions as to Clause XVII. He resided at Hastings, where there was a "Local Guide," published. One of the first things he saw was the name of a man who put opposite his name M.R.C.V.S. He called upon the conductor of that directory, and the man was now called a "veterinary attendant" only. Was the conductor of that guide responsible, or was the man who gave his address responsible? The other question was whether blacksmiths had any right to the word "veterinary" in connection with their forges? Was a man who was not a member of the College, but who had a son who was (although that son was a Roman Catholic priest and had never practised as a veterinary surgeon), justified in using the term "veterinary"?

Mr. MACKINDER said that no man ought to be allowed to advertise himself as being registered by the Royal College of Veterinary Surgeons, unless he was a member of the College.

Mr. HURFORD said that in the town in which he practised a man exposed a brass plate inscribed "W. Finch and Co., Veterinary Surgeons; established 1687. Upon writing the Secretary the brass plate had been removed, but was replaced by one inscribed "W. Finch and Co., Veterinary Attendant." He succeeded in getting Mr. Finch out of his neighbourhood, and he supposed the man went and practised his fraud elsewhere.

Mr. TRIGGER, though strongly in favour of members of the Council not being eligible for election as Examiners, did not think the time was ripe for legislation on the subject.

Mr. BANHAM proposed that the number of committees each gentleman was on should be published with the number of attendances, so that members could make out how many committees each gentleman had attended and the work he had done. Whilst he did not think any member of Council should vote for his own election as Examiner, he could not understand why the profession should not select an Examiner to sit on the Council if they chose. The matter was in the hands of the profession.

Mr. MACKINDER urged that some steps should be taken by the Council to secure for the members of the veterinary profession exemption from the horse tax.

The CHAIRMAN said at present they had no law which said that a teacher should not be an Examiner, and the tendency of the age was against making restrictions which would bar qualified people from taking any appointment. He was sure the Library Committee would take note of Mr. Hunting's remarks. Something had been said about prosecuting men (who were not members of the College) outside whose houses was a brass plate inscribed "Veterinary Surgeon." Whilst the Council was desirious to give the profession the full benefit of the "Veterinary Surgeons Act," he desired to say that other proof than the putting up of a signboard must be had before the Council could prosecute. A brass plate was no proof that the man lived there, and no proof that he practised veterinary surgery. Unless further evidence was brought before a magistrate they could not get a conviction; and if they did not do that the matter would be best left alone. No man was entitled to use the name of veterinary unless he was a member of the College, or a registered practitioner. Formerly any man could call himself a veterinary; he could not now. With regard to Mr. Leather's remarks as to the Register, he must point out that to a great extent the accuracy of the Register depended on the members themselves. The Council paid 2s. 7d. to every registrar of births, deaths, and marriages who sent a certificate to the College; and he hoped every veterinary surgeon who knew of the death of a veterinary surgeon in his district would send a notification of it to the

Secretary. A registered practitioner who called himself a M.R.C.V.S. would be prosecuted if it were brought to the knowledge of the College. No person other than a member of the College or registered practitioner was entitled to use the word "veterinary" in any sense or form. In several cases where this had been pointed out persons using it had removed it from their sign-boards, etc.; but if the College found a man who was defiant, and said "I shall challenge you," it would get up a good case and fight it. With regard to the case to which Mr. Hurford had referred, if Mr. Hurford would put it into writing the opinion of the solicitor should be taken on the point. In all the alterations which the Council had made they had endeavoured to meet the students, so that there should be no hardship, and if there was a case of hardship the Council would deal with the matter in a spirit of equity. The matter of exemption from the horse tax was being well looked after by Sir Frederick Fitzwygram, who had taken the greatest interest in it, independently of the College. He (the Chairman) had sought an interview with the Chancellor of the Exchequer. He had seen the Chancellor of the Exchequer's private secretary, and had emphasised the point by saying that veterinary surgeons were medical men in every sense of the word. The secretary had assured him that the matter was having the very best consideration of the Government. Another representation had been made by the Veterinary Department of the Privy Council through Professor Brown. So if the College failed to get exemption for the profession it would not be for want of trying. With regard to the paying off of the debt, he was glad to find that the members thought the Council had really done the right thing. As to the Edinburgh students, certain alterations had been made in the rules, and the Lord Provost (the head of the governing body of the school) had written to say he was very pleased to hear that new rules had been made, and he hoped and trusted they would be for the benefit of the profession as a whole. His (the Chairman's) impression was that the College was firmer that it ever was. The fact that Dr. Fleming had received nearly a thousand votes showed that the profession had a keen interest in what was going on; and considering that Dr. Fleming, who headed the poll, was an Examiner, he (the Chairman) hoped the meeting would not pass an amendment which would disqualify a member of Council to act as Examiner.

The amendment of Mr. Dollar, "That in the opinion of the members of the profession here present it is wrong in principle for a member of the Council to be an Examiner," was then put, and seven members voted for it.

The contrary was carried by a large majority.

The adoption of the report was carried unanimously.

A MEMBER moved, "That the next annual meeting be held in Glasgow."

The CHAIRMAN ruled that out of order. The charter gave no power to go to Glasgow, but they might go to Edinburgh or Dublin.

A MEMBER moved, "That a recommendation be made to the Council that the next annual meeting be held at Edinburgh."

A MEMBER seconded this motion.

A MEMBER moved, "That a recommendation be made to the Council that the next annual meeting be held at Dublin."

A MEMBER seconded the motion.

Both recommendations were put to the vote, and lost.

A vote of thanks was accorded to the Chairman, who returned thanks, and a similar vote to the members of Council was acknowledged by Dr. Fleming.

SPECIAL MEETING OF COUNCIL, HELD MAY 7TH, 1888.

Sir HENRY SIMPSON, the President, in the chair.

Present:—Professors G. T. Brown, C.B., J. McCall, W. Duguid, W. Pritchard; Dr. G. Fleming, C.B.; Gen. Sir Frederick Fitzwygram, M.P.; Messrs. J. D.

Barford, T. Briggs, J. B. Cartledge, J. Roalfe Cox, E. C. Dray, T. Greaves, W. G. Mulvey, J. F. Simpson, W. Woods, F. W. Wragg, and the Secretary.

The PRESIDENT said he had invited the Council to meet him in consequence of Professor Pritchard, Mr. Wragg, and Mr. Cox having thought it necessary to protest against the order in which the names of candidates for election to the Council appeared on the voting papers, and he wished to explain the course he had adopted. He found there was now nothing in the bye-laws and no instructions in the charters on this matter, and he had directed the Secretary to place the names according to seniority in the Council—*i.e.*, vice-presidents in the order they were elected last year, and members of Council in the order they were received at their last election, and following these, candidates who were neither vice-presidents or members of Council in the order their nominations were received. He had taken an opportunity of explaining this to the gentlemen who protested, and learned from them they did not regard the President's instructions as illegal, but contrary to custom, which they asserted was that names should be placed in the order in which the nominations were received at the College. He (the President) had pointed out that a bye-law which made it compulsory for candidates to be nominated in Council (when of course names would be taken down in the order of nomination) had been abolished, and therefore he was left with full responsibility, and he had thought right to adopt the principle of seniority. He thought with this explanation the protest might be withdrawn, and he invited the gentlemen named to withdraw, assuring them the matter has caused no ill feeling so far as he was concerned.

Mr. COX said there was an impression that many were inclined to vote for those whose names appeared first on the list. He considered the order in which the nominations were received by the Secretary was the order they should stand on the voting paper, and that the Secretary should prepare the list without reference to the President.

Mr. WRAGG said he protested principally because he understood the names would appear in the order they were read out by the Secretary, and he had asked the Secretary if such would be the case, and had been answered in the affirmative. He intended to give notice to add to Bye-law 4 the following words:—"The names of candidates shall appear on the voting paper in alphabetical order."

The PRESIDENT saw no objection to such a rule, but in the absence of any rule why protest against what had been done? Under Mr. Cox's presidency the names did not appear in the order they were read out by the Secretary, and last year candidates who were not members of Council were placed at the bottom of the list. Where, then, was their custom? For his part he did not believe it mattered where a man's name was; no one voted without knowing fully whom he meant to support. He considered that members of Council would do wisely to abstain from interference with nomination papers after they had been delivered to the Secretary.

Dr. FLEMING did not think the subject demanded very serious attention, and it never struck him that a man's position on the list had anything to do with the result of the election. It would not influence his judgment. He approved of Mr. Wragg's suggested alteration to the bye-law, and appealed to the gentlemen to withdraw their protest.

Professor BROWN felt with Dr. Fleming that, although it was right to bring the matter before the Council, it was not a fundamental question.

Mr. BRIGGS thought the names ought to have appeared in the order they were read out at the Council meeting.

General Sir FREDERICK FITZWYGRAM moved, "That the Council, after full consideration, is of opinion that Messrs. Pritchard, Cox, and Wragg acted on

bonâ fide grounds; it is perfectly satisfied that the President also acted on *bonâ fide* grounds, and to the best of his judgment; and this meeting is of opinion that an alteration of the bye-law, as proposed by Mr. Wragg, should be brought before the Council."

Professor McCALL seconded the motion.

On being put to the meeting, the motion of Sir Frederick Fitzwygram was carried unanimously.

Mr. WRAGG gave notice of an alteration to Bye-law 4.

THE ANNUAL DINNER

was held at the Freemasons' Tavern on the same day, Sir Henry Simpson presiding. Among those present were H.R.H. the Duke of Cambridge (who sat upon the Chairman's right), the Earl of Airlie, Lord Harris, Lord Arthur Somerset, Sir George Russell, M.P., General Sir F. Fitzwygram, M.P., Colonel the Hon. R. Talbot, Major-General Ravenhill, Professor Brown, Professor Axe, Colonel the Hon. W. Carington, Colonel Nigel Kingscote, C.B., Colonel Townsend, Lieut.-Colonel Burn, Captain Fergusson, Dr. Fleming, C.B., the Mayor of Windsor, and Messrs. Jacob Wilson, Lambert, Barnard Holt, Crookshank, Raymond, Walters, Woods, Tattersall, J. F Simpson, and a great number of other members of the profession.

After dinner, the usual loyal toasts having been duly honoured, Professor BROWN, C.B., proposed "The Army, Navy, and Reserve Forces."

The Duke of CAMBRIDGE, in responding, after referring to the necessity of maintaining the efficiency of the services, said that with regard to the object for which they had met together, he had had much pleasure in accepting the invitation of the President, because he considered that there was a very strong connecting link between the profession over which he had the honour to preside and the profession which was so largely represented there that evening. (Cheers.) Military affairs had large dealings with the duties with which those present were connected, and if it were not for the assistance which they received from the veterinary profession, the army would very often be placed in a very difficult position. (Hear, hear.) He hoped it would be acknowledged that he had on all occasions given every support to the valuable work done by that profession, and he thought from the fact that Sir Henry Simpson, Professor Brown, and his excellent friend Mr. Fleming had honours conferred on them, and that one of their members had recently been decorated for his services in connection with the perilous mission to Abyssinia, it was evident that the Government were at all times willing to admit the value of the gentlemen connected with the Veterinary Department. (Hear, hear.) One of the most difficult questions to be considered at the present time was the question of transport, which depended upon the value, utility, and efficiency of the animals that had to conduct it; and in that respect he did not know what they should do without the assistance they received from the veterinary gentlemen in the service, or those engaged under military authority in looking after those important matters. (Hear, hear.) He was sure that but for their aid many of our campaigns would come to a grievous and unsuccessful end. He, at all events, had the highest appreciation of the assistance they had given in times past, and he looked with confidence for further assistance in the future. (Cheers.)

Dr. FLEMING, C.B., then gave "The Lords and Commons."

Lord HARRIS, who responded for the Upper House, referred to the exceedingly responsible duties which veterinary surgeons had to perform in the country in connection with the Diseases of Animals Act. He did not know of any more difficult task, and he had never yet come across a landowner who was prepared to throw any doubt on the *bonâ fides* of the veterinary surgeons of the country. (Hear, hear.)

Sir GEORGE RUSSELL, M.P., responded for the House of Commons.

The Duke of CAMBRIDGE, in proposing the toast of the evening—"The Royal College of Veterinary Surgeons and the President"—said that every condition of life had progressed during his lifetime in a manner which seemed almost incredible, and he knew of no profession which had made such great advances as the veterinary profession. When he joined the army, the disease of Glanders among horses was very common. It was a most dangerous disease, which could not be cured, but which could be prevented by good management and care; and the result of the care and attention that had been given to it was seen in the fact that in 1887 not one single case of Glanders in the army had been brought to their notice. (Cheers.) He looked forward to the time when the admirable and useful profession to which those present belonged would extend still further the great advantages it had been able to give to the community, and he felt that the Royal College of Veterinary Surgeons was one of those institutions which ought to be supported and fostered on every occasion. (Cheers.)

The PRESIDENT having responded, the more official proceedings closed with the toast of "The Visitors," proposed by Mr. CARTLEDGE, and acknowledged by Colonel KINGSCOTE, who referred to the great advances made by the veterinary profession in recent years, and the difficulties with which it had to contend. He also alluded to the obstacle thrown in the way of protective inoculation by the Vivisection Act and the anti-vivisectionists.

SOUTHERN COUNTIES VETERINARY MEDICAL ASSOCIATION.

THE annual meeting of this Association was held at the White Hart Hotel, Guildford, on March 29th, when the subject for discussion was that of "Comparative Pathology—Eczema," on which Mr. W. Alston Edgar gave a lecture. The chair was taken by Mr. Barford, and the members present were Mr. J. D. Barford, Southampton, President; Messrs. J. B. Martin, Rochester; J. Carter, Guildford; F. Smith, A.V.D., Aldershot; Hunting, London, Legge, Dorking; Professor Pritchard, London; F. W. Wragg, Chas. Carter, Guildford; J. F. Simpson, Maidenhead; A. C. Piesse, Red Hill; W. A. Edgar, Dartford; E. A. Hollingham, Tunbridge Wells, Hon. Secretary.

The minutes of the previous meeting having been read and confirmed,

Letters of apology for non-attendance were read from Messrs. Hogben, R. A. Stock, F. Raymond, Dr. Fleming, C.B., F. Warren, J. V. Blake, H. King, and Sir Henry Simpson.

A letter was read from Mr. Gooch, the Honorary Secretary of the Lincolnshire Association, stating that at their meeting on January 26th it was unanimously resolved that Captain H. B. Russell, of Grantham, should be the President's nominee for election to the Council of the Royal College of Veterinary Surgeons.

Mr. BARCHAM, of the Norfolk and Eastern Counties Association, also wrote, saying that Mr. G. A. Banham, F.R.C.V.S., Cambridge, had been nominated by them for election on the Council. The members trusted that their choice would meet with the approval of the Southern Counties Association, and that the members of that Society would give Mr. Banham that undivided support which they gave to the Southern Counties Association's nominee in the past. The Association decided to support these gentlemen.

A statement of accounts for the past year was submitted by the Hon. Secretary. It appeared that the year was commenced with a balance in hand of £23 6s. 7d. The receipts amounted to £20 10s. 6d., making a total of £43 17s. 1d. Of this sum £13 2s. 2d. had been expended, leaving a balance to the credit of the Society of £30 14s. 7d.

On the motion of Mr. WRAGG, seconded by Mr. SIMPSON, Professor Pritchard was unanimously elected President for the ensuing year.

Mr. WRAGG proposed Mr. Barford as Vice-President.

This was seconded by Mr. J. F. SIMPSON, who also proposed Mr. Carter, of Guildford, as a Vice-President, remarking that whilst they had had very good Vice-Presidents in the past, it was a wholesome custom to vary occasionally.

Mr. BARFORD seconded, and both gentlemen were elected.

Mr. Martin and W. A. Edgar were re-elected.

Mr. E. A. Hollingham was unanimously re-elected Hon. Secretary.

Mr. W. ALSTON EDGAR next read the following paper on

"COMPARATIVE PATHOLOGY—ECZEMA."

The tendency to study pathology in its widest sense, regarding species of secondary importance, appears to be steadily gaining ground, and this line of work must, from a scientific standpoint, be regarded as of even greater importance to the medical and veterinary professions than comparative anatomy and physiology.

It is most remarkable that, as man has everything in common with the lower animals from an anatomical and physiological point of view, he should so long have been separated by the strong barrier of prejudice from his companions in disease and death, and have been assigned an imaginary place of isolation in the domain of pathology.

The veterinary profession must gladly welcome the ennobling of its work by this higher association, as hitherto disease in the domesticated animals has been chiefly studied in relation to its effects upon themselves, and not its probable influence indirectly upon the health of mankind.

I must confess to being one of a number in our profession who take a moderate view of the transmissibility of disease from animals to man, and welcome comparative pathology for the immense benefit it must confer upon veterinary medicine, if strict comparisons may be widely made in diseases, usually looked upon so confined to one species.

For the most part, comparison has been made between those diseases which, either directly or indirectly, are communicable from man to the lower animals, and *vice-versâ*.

Mr. J. Bland Sutton's interesting work in comparative hypertrophies, malformations, etc., almost suggests common causes for pathological changes in all species. That such common cause exists in some panzootic maladies, such as Glanders, Anthrax, Rabies, is clearly demonstrated; it is almost equally clear that in the group of communicable diseases between man and the lower animals, a similar micro-organism may operate as a common cause—*e.g.*, Tuberculosis and Actinomycosis—although the organism may possess minor points of difference, and the pathological changes induced may become modified in different species. Again, a zymotic disease, such as Variola, may be represented in several species, having many symptoms in common, and yet not be intercommunicable—*e.g.*, Small-pox, Cow-pox, and Sheep-pox; although, it would appear, there are some few persons who still believe that Vaccinia is Small-pox modified by its transit through bovines.

Those, however, who hold this view do not attempt any explanation of the suspension of the natural law of reversion to original type, and show how it is that in a series of generations the virus does not regain its normal virulence in natural soil, and again become capable of producing, instead of protecting from, Small-pox.

Further, there are some diseases, such as Diphtheritis and Scarlet Fever, possessing in man well marked and easily recognised symptoms with a definite etiology, which diseases are *supposed* to have their counterpart in the

lower animals. The former probably affects the gallinaceous family, but it requires far more demonstration before it can be accepted as affecting calves and pigs. I am strongly of opinion that the so-called cases of Diphtheritis in the pig have been due to ingestion of Anthrax blood or flesh, which, under certain circumstances in the pig, produces Malignant Sore Throat, Tonsilitis, and Ulceration of Pharynx and Larynx, frequently causing death; although I am informed by an eminent bacteriologist that pigs possess complete immunity from Anthrax, and this he concludes because the bacillus anthracis is not found in the blood and tissues after death.

All are probably familiar with the recent attempt to establish, in the case of Scarlet Fever, its identity in man and bovines, but with what success the issue best determines.

The work done, however, in this direction has had its negative value in establishing our ignorance in comparative pathology; and it is to be earnestly hoped, in the interest of medical and veterinary students, that the proposed teaching University of London may, in the event of its establishment, be enabled to found a chair of comparative pathology.

In America comparative anatomy and pathology receive much more attention than in this country, and the *Journal of Comparative Medicine and Surgery*, published at Philadelphia, is superior to any corresponding periodical at the service of the profession in this country. I am free to admit that a very large share of advantage in the study of disease on comparative lines must fall to the veterinary pathologist.

The splendid strides made during the last decade in medicine and surgery are capable, in many directions, of application in our profession. We can profit largely by applying general principles in dealing with disease, and by a study of current medical literature the veterinarian may trace analogy in etiology, semiology, and treatment, in a large proportion of diseases affecting the lower animals.

We have many advantages denied to practitioners of human medicine, in following up our diagnosis and treatment by *post-mortem* examination, owing to the comparatively short lives of many of our patients; and thus, by careful observation and a record of our work, we may return to the sister profession at least a remunerative interest. For instance, in the subject of this paper—Eczema—the surgeon has few, if any, opportunities of demonstrating *post-mortem* observations made during the life of his patient; but by the veterinarian they may, with moderate effort, be followed out in almost every case.

In the present state of our knowledge, however, one thing is especially clear—that any inquiry concerning diseases of the lower animals in their relation to public health should be conducted conjointly by representatives of the medical and veterinary professions, as laboratory and clinical observations would then probably be more in harmony, and calculated to secure the advancement of truth.

It is scarcely necessary that I should point out that the subject of this paper—Eczema—has no connection with the zymotic form, Eczema Epizootica, otherwise known as "Foot-and-mouth Disease," my desire being to trace analogy in diseases other than of an infectious type.

Several diseases of great interest and common to different species, might have been chosen—such as Cancer, Ovarian Cysts, Pneumonia, etc.—but my selection of Eczema is due to a very considerable experience of that malady during the past eight years, in most of the domesticated animals, together with the fact that comparatively little information is available for a study of it.

Although Eczema is usually regarded and classified as a skin disease, I have some doubt if it is but exceptionally, *per se*, a cutaneous malady, but

rather to be regarded as a subjective disease—an index, whereby the pathologist may read the hidden pages of visceral derangement and structural change.

I am confirmed in this opinion by a large number of *post-mortem* examinations in the dog and pig, and in two in the horse, some of which I will subsequently quote.

Eczema may be defined as acute or chronic Hyperæmia and Inflammation of the Dermis, accompanied by, as its name implies, an exudation of serum from the cutaneous capillaries.

All the varieties of the disease described simply represent a series of pathological changes, and the terms usefully express the various objective signs of the malady—viz., redness, œdema, papulation, exudation producing vesication, with rupture of vesicles and incrustation, subsequently followed by —in the more chronic forms of disease—desquamation of epidermis, thickening and induration (local or general), generally the former, frequently accompanied by fission or cracking of the skin. The subject of Eczema is conscious of certain subjective sensations, such as intense burning, itching, and pain; the two latter only can be demonstrated in the lower animals, although it may be reasonably concluded from manipulation of the diseased parts that the burning sensation is actually experienced. Intense itching is patent in all animals; pain is frequently evidenced upon palpation, and by constitutional disturbance.

It is interesting to note the remarkable analogy in the varieties of Eczema met with in man and domesticated animals; by taking up all the above species, almost every phase of the disease detailed by the late Sir E. Wilson may be compared—*e.g.*, I have observed—

Eczema erythematosum or rubrum in the horse and dog.
E. papalosum in horse and dog.
E. vesiculosum in horse, cow, sheep, pig and dog.
E. pustulosum or *impetiginosum* in horse, pig, and dog.
E. ichorosum in horse, cow, and dog.
E. crustaceum in horse, cow, and dog.
E. siccum in horse and dog.
E. squamosum in horse, cow (parasitic and chemical only), pig, and dog.
E. fissum in horse and pig.
E. hypertrophicum horse (extremities only).

The above varieties assume an acute or chronic form in the different species.

Acute Eczema occurs in horses, cattle, sheep, pigs, and dogs; and chronic forms in horses, pigs (rare), and dogs only.

Again, correspondence in localisation of the disease in the several species is remarkable. Local forms occur in man, horses, cattle, sheep, and occasionally in dogs—*e.g.*, nasal and orbital Eczema; but in the pig and dog the disease in either variety is most commonly diffused.

Labial and facial Eczema in man, horse, and sheep, the so-called "crusta labialis et facialis," which represents E. crustaceum.

Mammary Eczema in cow, described by some writers as "Blister-pox" and "Black-pox," which, however, frequently also exists on the soft skin from the umbilicus to the mammæ, but is commonly unnoticed, owing to its position. Orbital Eczema is also seen in cows.

Local Eczema in its chronic form is well represented in the extremities of man and horse in E. fissum and hypertrophieum, known to veterinary writers as psoriasis carpi et tarsi, or "Mallenders" and "Sallenders"; and the chronic transverse fissures from knee to fetlock, described under psoriasis, and the indurations of "grease"—sequela of Eczema.

In the etiology of Eczema, however, is found the most interesting and

useful comparisons, as it appears fairly demonstrable that conditions which operate in its production in man, are also conducive to similar results in the lower animals, modified in different species.

If this be true of Eczema, it may be equally so in many other pathological conditions, and it may be possible by such comparison to explain many obscure causes of disease in certain species, which, being occult in one, may be capable of demonstration in another, if, as appears more than probable, common causes have common results, modified only by species and circumstances.

Causes may be divided in all animals into extrinsic and intrinsic.

In the human subject, causes operating from without are referred to as irritants acting locally—*e.g.*, heat, moisture, friction, chemical agents, exposure to sun's rays, etc.

Similar causes are doubtless in operation in the lower animals, with parallel results, but, I think, almost invariably associated with some constitutional disturbance acting as a predisposing cause.

For instance, it frequently happens that a flock of lambs or sheep are depastured upon vetches in the summer, and when a large quantity of thistles are present in the tares, a severe outbreak of labial and facial Eczema may occur. This, however, happens more frequently when the lambs are receiving an additional diet of albumenoid food—as cake or peas. These outbreaks occur on other green feeding stuffs than vetches, but rarely when sheep are upon a green food diet only, although the pasture may be charged, as it were, with thistles.

Again, in the horse, flannel-lined collars and pads are a frequent source of scapular and dorsal Eczema to sensitive-skinned animals; but the predisposing cause of the disease is invariably an important change of diet or constitutional condition affecting the excretory and digestive apparatus, the local manifestations being due to congestion and friction. I think exposure to continuous moisture operates as an entire cause in the production of Eczema of the heels and pasterns in horses, which in its later stages may become transformed into the chronic condition described as "grease." Also vesicular Eczema of extremities due to irritation produced by *Symbiotes spathiferus* is, of course, due to external conditions only. I have seen several cases of Eczema produced in cattle and sheep by chemical irritants—arsenic and paraffin oil—but must regard such cases as purely artificial conditions.

I have never, to my knowledge, seen it produced by the action of the sun's rays in any of the lower animals—their hair or wool-covering probably preventing this.

Local mammary Eczema in the cow, the Blister-pox and Black-pox (which is E. crustaceum *plus* dirt, etc.) of milkers, is possibly caused by irritation from the hands in mulsion, or lying in constant moisture, especially decomposing urine. I think the latter is the true exciting cause, as the eruption frequently exists on the soft skin from the udder to the sternum, although, as previously stated, it is frequently unnoticed in this position. I say possibly caused by irritation, etc., because I think this disease, manifested locally in the cow, is always primarily caused by constitutional conditions. A few weeks ago a severe case of orbital Eczema occurred in a cow under my notice, the eruption being confined to the eyelids and sides of face; this was suppressed by systemic and local treatment; there was no explanation for its localisation.

In the human subject, causes—constitutional—are referred to under nervous shock, disturbed nervous function affecting nutrition and circulation, in many cases caused by disordered digestion, painful dentition, menstruation, utero-gestation, and parturition, Eczema being not infrequently an indication of broken health.

Many of the foregoing clauses are in operation in the production of Eczema in our patients, especially those referable to disturbed circulation and digestion.

It is difficult to define how far disturbed nervous function is a primary cause in any of the domesticated animals. Eczema is common in children during dentition. I have observed several outbreaks of the vesicular form in pigs during the emption of the temporary teeth, but am not aware that this is a cause in any other species.

I have seen no cases in any animals which may be traced to æstrum, utero-gestation, or parturition.

Two things have struck me as remarkable in the study of this subject—viz., the almost constant hepatic and occasional splenic changes in the lower animals; and, in medical literature, an almost total absence of any reference to either hepatic or splenic derangement as a complication of Eczema, excepting, so far as it may be inferred, under dyspeptic conditions associated with hæmorrhoids or varicose veins.

I am of opinion, from *post-mortem* examinations made in the horse, pig, and dog, and from the line of treatment most successful in those animals, that the liver is the viscus which is, in a large proportion of cases, the primary cause of cutaneous disturbance.

This, of course, will not apply to those cases of chronic Eczema in the dog which are coincident with cardiac disturbance or valvular disease with secondary hepatic changes.

Personally, I have been a subject of local Eczema for many years, and it frequently occurs either in conjunction with or immediately after functional disturbance of liver.

Acute Eczema is frequently fatal in very young pigs—*i.e.*, from three to six weeks old, and under the circumstances it is not infrequently reported for Swine Fever. A whole litter will sometimes die off, and the only *post-mortem* changes remarkable are the intense congestion of the liver and the marked cutaneous eruption, which is equally distributed over the whole skin surface down to the knees and hocks.

It may be of practical interest to make a few further remarks upon this disease in pigs. Although very fatal up to the age of six or seven weeks, it is rarely so after that time. It occasionally requires considerable care to differentiate between the vesicular and crustaceous variety of Eczema and Swine Fever, the pathological changes being almost identical where the well-marked cutaneous form of the latter disease is present.

In Eczema, however, the temperature is not above 103·4°, the *purple* condition of skin is not present, and the pigs do not die; and it will also be noted that the attack is generally confined to the same litter, indicating an absence of infection, although several animals may be attacked.

It has struck me that heredity must play some part under such circumstances, as I have noted such cases where several dozens of animals have been exposed to the same dietetic conditions and sanitary surroundings.

In many *post-mortem* examinations of the dog, I have noticed the same marked congestion of liver as is present in young pigs, but generally accompanied by considerable softening of structure. I may, however, explain that all, or nearly all, such observations have been made in dogs probably over three years of age, and subjects of recurrent Eczema of many months' or years' standing.

The mucous membrane of the stomach and intestines is invariably normal.

Several cases of cardiac disease, chiefly valvular, have been associated with hyperæmia and hypertrophy of liver, accompanied by chronic Eczema. With such lesions I have regarded the heart mischief as the primary cause of Skin Disease.

The frequency of such cases in canine practice renders it important to make a most careful examination of the circulatory apparatus before venturing a prognosis.

I have no *post-mortem* evidence of Liver Disease in horses or cattle coincident with Eczema, but I desire to draw attention to two cases in the horse of chronic localised vesicular Eczema associated with diseased spleen.

Case No. 1: A brown horse had been the subject of Eczema of the extremities for two or three years, which required constant local applications to keep in check, also intermittent courses of medicine; no treatment, however, afforded more than temporary relief.

A few months before the animal was destroyed, it suffered from an acute attack of labial Eczema, involving also the inside of mouth, the vesicles breaking and healing readily; the animal, although generally a fairly good "feeder," seldom looked well, and was dull at work, the lassitude being greater sometimes than at others. Before the final illness occurred, the lassitude became so marked that the horse was rested.

The appetite continued moderate, and excretions normal; but there was marked pain upon percussion over the region of liver, arching of back, and groaning when turned suddenly round; the mucous membranes were always slightly icteroid.

My diagnosis at this stage was enlargement of liver; but upon rectal examination I found that the spleen was enormously enlarged, and several nodules, about the size of walnuts, could be felt through the bowel. The animal was destroyed, and the *post-mortem* showed enormous splenic enlargement, with an uniform diffusion of the tumours throughout the whole structure of the spleen, presenting upon section the characteristic features of Lymphadenoma. I conclude, from a similar case, at present under observation, that the Eczema was caused by the condition of spleen.

In case No. 2, the animal is still living. It has been a subject of chronic facial Eczema for two years or more. I am not aware that any treatment has been adopted. It came under my notice owing to staggering fits in the stable. I found cardiac disturbance, and consequently made an examination of the liver and spleen. The latter was sufficiently enlarged to be felt *per rectum*, and I concluded that (owing to the animal being a white one) the disease was probably Melanosis, although no external evidence of that condition existed.

While I refer to functional derangement and structural change of the liver as a very frequent cause of Eczema in the lower animals, I am free to admit that many cases may be due to disturbance, from dietetic causes, of the digestive organs generally, and also venal changes which, by constantly disturbing the vicarious cutaneous circulation, tend to establish the localised or general congestion, which, with a naturally weakened skin tissue, is quickly followed by irritation and exudation.

In general practice, by far the most frequent patients are horses and dogs; the latter are attacked in large numbers all the year round, probably owing to the artificial conditions under which so many dogs are compelled to exist.

I cannot trace any analogy in man and the lower animals in Eczema as an indication of broken health; as a large percentage of cases occur in dogs and horses in a plethoric condition, especially the former, when being well fed and allowed but little exercise, the liver becomes inactive, and Eczema is commonly the result. That this is a fruitful source of the disease is evidenced by the salutary effect of diametrically opposite conditions being imposed when the animals are under treatment.

Eczema occurs occasionally in dogs after surgical operations, and also as a complication during convalescence in some acute diseases, as Distemper, and

in the horse after Influenza, or any prolonged illness, when the animal is rapidly regaining strength and receiving large quantities of nitrogenous food.

Prognosis is identical in man, horse, and dog; in each the disease is often tedious and difficult to cure, recurring at irregular intervals or seasons, patients being sometimes under treatment for many months, the ultimate issue largely depending upon the primary cause. I have seen no chronic Eczema in sheep or cattle, and only one case in the pig—a sow in which the disease lasted for about four months, and assumed the varieties of E. vesiculosum, E. crustaceum, and E. fissum, well marked cicatrices being formed upon all parts of body. She was killed in a very fat condition, with the disease in an active state.

Treatment, by comparison, is of special interest, and it may, I think, be fairly concluded that success lies in the direction of adoption of general principles, which may be generally followed in dealing with all species.

Where causes are identical and the variety of disease similar, treatment at the outset will be much the same in any animal. Of course, the selection of drugs will in many cases differ, for simple convenience of exhibition or application. Idiosyncrasy, I feel convinced, plays an important part in domesticated animals, as in man; for it may be often noted that certain drugs which act successfully in one animal will, when applied to another of the same species, under apparently precisely similar circumstances, have no curative effect.

Eczema, in one or more of its many varieties, is probably the most common skin disease by which the horse and dog is attacked, dogs being, in my experience, affected with special frequency and in large numbers during the spring and summer. Chronic recurrent Eczema is more common in this species than in any other.

Under almost all circumstances, local and systemic treatment is necessary, the former, except in one or two chronic phases of local Eczema in the horse, being rarely successful alone.

It is quite beyond the scope of a limited paper of this kind to enter into detailed treatment for the different varieties of the disease in all the species enumerated as affected by it; and I propose only to follow, in this portion of my subject, the same general line of comparison.

It is not always possible to define the exact cause or causes of each special attack in any given animal, but, where a number are affected simultaneously, the cause may be generally referred to dietetic derangements, and under any circumstances a change of diet is beneficial, if not essential.

It is necessary to correct any dyspeptic conditions, if existing, and to promote, by regular exercise, hepatic and cutaneous circulation, in order that the normal functions of the skin may be stimulated, and the tendency to localised congestion overcome. I think this essential exercise, in the treatment of dogs and horses, is a point often overlooked and omitted.

In the horse, when severe Eczema of the heels exists, exercise cannot, of course, be had recourse to, or transverse cracking of the skin may possibly be caused.

In outbreaks of the disease in sheep and pigs, and entire change of diet and situation, in conjunction with the administration of salines, for a couple of days is often the only treatment necessary. Liquor arsenicalis is with advantage given to sheep, if any further treatment is called for; but, as I have stated, these animals do not often suffer from a secondary attack, or with the disease in a chronic form. My further remarks will apply to horses, cattle, and dogs.

A glance in Dr. Ringer's therapeutics, down the list of drugs suggested in the treatment of Eczema, will indicate at once that the action of medicines

in man and the lower animals is identical, as one may chose from that list most of the general agents employed by veterinarians in the treatment of this disease.

I desire to call attention to two or three agents, not generally used in the treatment of Eczema, which may be employed with special advantage.

The most common varieties in the horse I find to be vesicular, pustular, and perhaps dry Eczema—E. siccum—where alopecia takes place all over the neck, shoulders, and back.

This is often a most obstinate form to treat.

The catarrhal form, E. ichorosum, is not uncommon; it is generally acute over one large divisions of body—*e.g.*, the hind-quarters or back. I have also seen some remarkable cases of this variety in cattle.

A mild saline purgative in the cow, and an aloetic in the horse, when the animals are in good general condition, is the best preparatory treatment, followed for a few days by magnes. sulphate and potass. nitras, in small doses. If the skin does not resume its healthy condition after the first effusion, a course of iron carbonate or liquor arsenicalis, generally effects this result, although, in some cases in the horse, arsenic appears to be of questionable use.

Locally, no drug seems to act so well in arresting the catarrh and irritation as a solution of plumbi subacetas or hydrarg perchloridum, one part to one thousand in water. This is the least obstinate form of Eczema in horses and cattle, although it generally attracts much attention owing to the suddenness of attack and apparent severity.

Similar treatment in the vesicular form is pursued with advantage at the outset; but here there is a greater tendency to assume a chronic condition.

Under such circumstances, the mucous membranes and liver must be carefully watched. Bicarbonate of potash and soda replace the mag. sulph. and nitrate of potash, and a small dose of calomel is useful once a week or oftener; after a fortnight, liquor arsenicalis or bromide of arsenic, alternated with a course of strychnia.

Externally, a stimulating lotion often relieves the intense itching, when lead lotions and ointments fail to do so. Here I may especially mention the remarkable effects in some cases resulting from the application of Professor Tuson's "Sporokton," which, as is generally known, is a preparation of zinc and sulphurous anhydride, there being much free gas. This dressing certainly does act in some cases in the horse and dog almost as a specific. Its curative effects in "grease," as a result of Eczema, have only to be more fully recognised by the profession to be largely appreciated. Upon one occasion a lady who was suffering from Eczema was so struck with its effect upon her dog that she sent for a bottle for herself, and the result was equally satisfactory.

Where itching is intense, and considerable surface has been denuded by friction or scratching, the oleate of lead acts well.

E. pustulosum in the horse has given me more trouble than any other variety, and I am of opinion, from its recurrence year after year, that it is generally associated with hepatic changes. Under any line of treatment, it is liable to recur. A frequent change of diet is useful.

A case came under my notice a few months since which had been under treatment for nearly a year by different veterinary surgeons. I suggested a liberal supply of mangold wurzel per day, and without any medicinal agents the animal was in a few weeks well. This recovery will, however, probably be only temporary. I have found little or no benefit from arsenic in some of these cases, but better results from hepatic stimulants.

The treatment as indicated for vesicular Eczema in the horse is equally successful in the cow. The local mammary form is usually overcome by an unguentum of diacetate of lead. In several large dairies in my practice,

clients having a supply of this ointment treat their cases of Blister-pox without any constitutional agents, except, possibly, a mild saline draught.

In the dog, E. rubrum, vesiculosum, and crustaceum are the varieties met with in every-day practice; ten per cent. of such cases, I think, prove chronic and troublesome, some taxing one's knowledge of the pharmacopœia.

I think it is a mistake to restrict dogs to one special form of diet, as is so frequently done; animals, for instance, kept almost entirely in a house are allowed little or no flesh food, and a farinaceous diet entirely, predisposes dogs to liver congestion and Eczema.

Under such circumstances, an opposite diet is indicated; this applies to any form of the disease.

At the outset, mild aperients, followed by hepatic stimulants and nerve tonics. I may here draw attention to the action of euonymin, having found from personal experiments that the drug was capable of producing an enormously increased excretion of bile. I was led to try it upon the dog in Eczema, in conjunction with small doses of strychnia, and it acts in very many cases with remarkable success.

The action of this drug has led me to conclude, in conjunction with *post-mortem* evidence, that liver congestion is a very frequent cause of Eczema, quite apart from any disturbance of the stomach or intestines.

During the course of treatment an occasional aperient is an advantage; also administration of potass bicarb. in food. As tonic agents, quinine and strychnia, I think, act the best, given alternately with iron carbonate and sesqui-carbonate of ammonia.

For local applications, solution of subacetate of lead in the acute forms, where exudation is great and the irritation intense, is, as in the horse, very useful, or oleate of lead, or zinc benzoate ointment, may be equally efficacious. When the skin has been much scratched, the ointment affords protection and comfort. The powders useful in the human subject are of little use in the lower animals, owing to the action of the panniculus muscle.

Where the disease has become more or less chronic, and the skin tissue in a low nutritive condition, stimulants must be applied. I place foremost "Sporokton"—the strength of solution to be regulated by the condition of skin.

Tar, sulphur, and turpentine ointment, freely applied, often stops the intense itching in the form E. rubrum; and in many cases, where every other dressing has failed, iodide of sulphur ointment will effect a cure. Either of these agents also act well in the dry, diffused Eczema of the horse, and in the local form affecting knees, hocks, and back of legs, from centre to fetlocks, an ointment of belladonna extract and glycerine is very useful, softening down the skin and preventing the obstinate cracking and induration.

From this brief outline of the treatment adopted in Eczema of the lower animals, it will be noted that certain medicinal agents give almost identical results in all species, from man downwards—which I think, in conjunction with the analogy demonstrated in etiology and semiology, tends to establish the advantage which must accrue—at any rate, to veterinary medicine—from a study of comparative pathology.

The interest shown in this direction by medical workers, and the prominence given to the subject by the leading medical journals, should encourage our profession to share to its utmost ability, on this common battlefield, the burden of the fight with disease and death—the inheritance alike of man and his dumb companions and slaves.

The PRESIDENT said he was sure they had all been gratified by the highly scientific paper which Mr. Edgar had read, and he trusted they would have a useful discussion upon it.

Mr. SIMPSON said he regretted to have to leave the meeting. Had he been

able to stay, he should have referred to the frequent cases he had seen of fits in dogs following an attack of Eczema.

Mr. HUNTING said that the first thing which struck him was that, although the paper pointed out the great advantages of a study of comparative pathology, it was rather an illustration of one of its defects. If there was one skein in medicine more tangled than another, it was the pathology of the skin diseases of the human subject. To divide Eczema into so many heads as it was divided simply confused the matter. They had, in Eczema, every skin disease they could think of. If there was such a thing as Eczema, they would find that it comprised all skin diseases. The fact was, they knew absolutely nothing of these constitutional forms of skin disease. (Laughter.) It was a fact. In Eczema they had a term which covered a multitude of skin diseases. It was important, therefore, to define at the outset what they meant by Eczema, and he would at once limit it to that skin disease which commenced with the vasicular eruption. The term "exudative skin disease" was a fair term to describe what one meant by Eczema—a disease in which the first symptom was irritation of the skin. The moisture dried up, but the irritation continued, and then came scurfiness. Following this, there came scales, the skin having thickened and cracked, all these being the symptoms of Eczema. He did not believe in the different varieties of Eczema; they were simply the different stages of the disease. Sometimes the disease hung in one stage longer than another. The paper also alluded to the difficulty of arriving at anything like the true cause of the disease. They found Eczema in horses and dogs, under all sorts of circumstances, and in all sorts of animals. He was willing to allow that there were conditions which they found more generally connected with it, but the difficulty was in distinguishing the true cause from what he might call the accidental cause. Nearly every animal that had passed the stage of maturity suffered from some weakness or another. He might find an animal with Liver Disease, and suffering from Eczema at the same time, but it did not follow that there was any connection between the two diseases; or the same animal might have Heart Disease, but it was not necessary that there should be a connection with Eczema. If any one could show him statistics which showed that those two diseases occurred together in a large number of cases, then he would allow that it was logical they should connect them. But was it so? He agreed with Mr. Edgar in connecting hepatic changes with Eczema—at any rate, in the dog. His experience in Eczema was entirely confined to horses and dogs. They had in the dog functional derangement of the digestive organs, and there was nearly always a recurrence of disease. If a dog had Eczema he would surely have it again. It occurred, too, in the spring and autumn; and one had to consider two things then—the climatic changes and the change of the animal's coat. He had no doubt in his own mind that one cause of Eczema was that it was hereditary. Over and over again he had detected it in St. Bernards, in whom there was particularly a tendency to recurrence. In some cases, not one of them escaped from their puppyhood upwards. With regard to the mode of treatment, he agreed with Mr. Edgar that internal remedies were as requisite as external remedies, but that brought him to another point. Most of the cases mentioned by Mr. Edgar were cases in which no internal remedies could be applied. He held that they were not Eczema, and had no right to be called as such. As to the irregular action of drugs, there was no wonder that they acted irregularly, when the same drugs were used in twenty different cases in which twenty different symptoms were visible. If they did not know what the cause of the disease was in nineteen cases out of twenty, they were not likely to get their drugs to act regularly. It seemed to him impossible to explain very much about the treatment of Eczema. They used a certain thing because

somebody else used it before them, and they believed it would be efficacious. For some years he used arsenic alone, until he was horribly disappointed. (Laughter.) And now he never used it except in combination with iron. He did not know why, except that it was because somebody else told him to. His experience, however, was that it was a good mixture. With regard to local treatment in the vesicular stage, they should dry the discharge with an astringent. If it had to be dried, they should not use stimulants, except in the last chronic stages of Eczema, for they did more harm than good, and the animal went half mad through their application. The chief thing was a change of diet. He thought he had made a discovery some years ago. He adopted the plan of feeding dogs suffering from Eczema entirely on meat, but he found that their friends, Professor Pritchard and Mr. Field, junr., had made the same discovery. (Laughter.) It was found to answer, and he was inclined to think, therefore, that there was a great deal of truth in the efficacy of the treatment. If he had a dog suffering from Eczema, he invariably changed his food, but for the first fortnight or three weeks he put him entirely on meat food.

Professor PRITCHARD said that Mr. Hunting had really been his mouthpiece, for he agreed with what he had said. They must come to the conclusion, he thought, that Eczema was an inflamed condition of the skin, giving rise, whether visible or otherwise, to an exudation. That was one conclusion he had arrived at, and another was that it might be due to chronic disease almost of any visceral organ, or it might arise from an excited cause, producing a temporary attack. It was a fact that the horse, after being clipped and exposed to the cold wind, frequently became attacked with the disease, and such a case was one which they might deal with successfully; but if they had a case arising from the disease of some internal organ, although they might for a time get rid of the mischief, it would recur. That was another conclusion he had come to. He had not used, in treatment, arsenic and iron combined, but he had used arsenic alone successfully inside and outside. Mr. Edgar had spoken very confidently of Professor Tuson's remedy. Well, he had resorted to sheep-dip very successfully in cases which would frighten some people. He attended to an outbreak in a stud on a farm of one of his clients, and tried in every way to get rid of the mischief, but he could not until he had recourse to this preparation of arsenic, which it really was. So successful was he that he entirely eradicated the disease from the stud. He agreed with Mr. Hunting when he said that if they were at a loss to know what to call a skin disease they put it down to Eczema. He did not think they had the true definition of the term Eczema beyond an inflamed condition of the skin. One remark he should like to make, in the form of a question. Mr. Edgar diagnosed a case of enlarged spleen from an examination *per rectum*. He should like to know how that was done. Taking into consideration the distance which the arm had to traverse through the rectum, and other points, he should like to know whether Mr. Edgar positively came to the conclusion, before the animal was destroyed, that an enlarged spleen existed.

Mr. SMITH, A.V.D., said that in India Eczema was the most common form of skin disease met with, and during certain periods of the year it was not uncommon to have 50 per cent. to 70 per cent. of the horses affected at one time, and this would continue until the rains had disappeared. The horses presented a pitiable aspect, their manes, in the majority of cases, being cut off for cleanliness, and the hair removed from the head, neck, and under the belly. So serious were matters at times, that stringent measures had to be adopted to put a stop to the outbreak. For a long time he was puzzled to know what the disease was due to, and he did not think he was sure now, but a professional friend of his (Mr. W. S. Adams, A.V.D.), who had worked hard

at the subject for a long time past, came to the conclusion, after a large number of experiments, that it was due to feeding on green grass. In India they had no hay, but the forage was carried every day (green). The orders were that it should be dry before being used, but that was impossible during certain months of the year. Generally only the exposed parts of the horses were affected with the disease. He felt sure that a change of diet—depriving them of green food and giving them dry grass—was most beneficial. The effect was very marked, for the disease would to a considerable extent disappear, although there were certain chronic cases which resisted all treatment. As to the connection between Eczema and some internal complaint, he might say that Liver Disease was frequently found at the same time, and the probability was that the two were associated. Often he had had very bad cases of diseased liver, some of them being enlarged to the extent of thirty and forty pounds. They had a nodulated appearance, due to lime deposits, and were speckled. He had seen mules that suffered from the same acute liver complaint, but without suffering from Eczema. He thought there could be no doubt, however, that there was a distinct connection between the green grass and Eczema. Splenic disease in India was rare, but skin disease was exceedingly common. He saw one spleen which weighed fifty pounds, and the chief feature was its extraordinary length, which was about two feet.

Replying to Professor Pritchard, Mr. SMITH said that a large spleen could be diagnosed through the rectum. Continuing, he said that exposure to heat was undoubtedly an exciting cause of Eczema. One case of skin disease which came under his notice was very singular; it was that of a horse suffering from acute Eczema, followed by an attack of Purpura. Suddenly, and without any warning, it commenced to lose all four hoofs. He was exceedingly surprised, and could do nothing. The horse lay down the greater part of the day, and he allowed the case to go on in order to watch its progress. The two hind hoofs had commenced to grow again, but the others did not. The only thing he could call it was Eczema of the hoofs. The horse suffered very much from skin disease. With regard to treatment, change of diet was essential. Mercurial ointment with soft soaps, was a useful dressing, and could readily be removed by washing. With regard to the diagnosis of enlarged livers, he once thought they could be detected by percussion, but he did not think so now; a horse's liver was completely covered by the right lung and the double colon.

The PRESIDENT agreed that the different classes of skin diseases which they had to deal with were perhaps more complicated than anything else which came under their notice. There was no doubt that the medical and veterinary professions had in many ways advanced the study of medicine, especially from a pathological point of view, by frequently conferring together and comparing notes on many diseases that occurred. A proof of that was to be found in the celebrated case which occurred at Hendon. He had not had very great experience of Eczema, but whilst it was found in dogs perhaps more than in horses, he quite bore out the idea that to a great extent it was constitutional. There could be no doubt that, if the liver was not doing its work, the skin would suffer. That the organs worked together in that matter was undoubtedly a fact, seeing that constitutional treatment was probably of more importance than external applications.

Mr. EDGAR, in replying on the discussion, regretted the lines which the discussion had taken, seeing that it was all on one side. The subject of his paper was Comparative Pathology, and Eczema was simply an illustration, and he endeavoured to make clear the advantages of comparing the disease in one animal with another. He had derived considerable advantage by applying his knowledge of medicine in the human profession to the lower animals. He urged that they should be prepared to take their share in the

field of labour with the medical profession, otherwise they would find themselves thrown out of the field of practical pathology altogether. The conclusions to which Dr. Klein came were in themselves great reasons for veterinary practitioners being called in with the medical men. (A voice: "They have been.")

Mr. EDGAR: Yes, secondary.

Mr. HUNTING: Professor Axe was the commencement of the controversy.

Mr. EDGAR: The conclusions to which Dr. Klein came were accepted and published, when the observations of the veterinary surgeons were kept in the background.

Mr. HUNTING: Yes, and were sneered at.

Mr. EDGAR: The error was made by Dr. Klein himself. If ever a man was in error, Mr. Cruikshank has shown that Dr. Klein was.

Professor PRITCHARD: The veterinary surgeons were certainly the cause of bringing to the front the mistake which Dr. Klein made.

Mr. EDGAR: So far as the public were concerned, the veterinary profession had no credit at all in the matter; the medical profession had the whole of it. The veterinary profession ought to be on a different footing entirely, in order to take its position in an inquiry of this kind, and that is why I should like to have seen the advantages of comparative pathology dwelt upon in this discussion. In the course of further remarks, Mr. Edgar referred to the distinction between Ecthema and Eczema, and said that it was because they did not take the trouble to discriminate between one phase and another that they found themselves in such a hopeless muddle, from which it was desirable they should soon extricate themselves. He thought Mr. Hunting agreed with him that hepatic derangements were common and coincident with liver changes. From his experience, he should say that if the heart of the dog was affected, the liver suffered secondarily; then the skin suffered, and he traced the cause of Eczema back to the heart. Professor Pritchard's remarks, he thought, supported the general tenor of his paper as to the action of arsenic. There was no difficulty in describing its action if they knew anything of therapeutics. He went on to explain that he had diagnosed an enlarged spleen *per rectum*, and said that he once saw one taken from a horse which weighed 75 pounds. Mr. Smith's remarks regarding the relation of diseases of the skin and of the liver were entirely confirmatory of his paper.

On the motion of the PRESIDENT, seconded by Mr. WRAGG, a cordial vote of thanks was passed to Mr. Edgar for his interesting paper.

Professor PRITCHARD proposed a vote of thanks to the President for the admirable manner in which he had conducted the meetings during the past year.

This was seconded by Mr. WRAGG.

The PRESIDENT thanked them for the compliment they had paid him, and said that for any little trouble he might have taken he was amply rewarded if he had given them satisfaction.

On the motion of Mr. WRAGG, seconded by Mr. EDGAR, a vote of thanks was passed to Mr. Hollingham for his services as Honorary Secretary during the past year, after which the meeting terminated.

The next meeting of the Association will be held at the First Avenue Hotel, London.

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

THE usual quarterly meeting of this Association was held at the Blackfriars Hotel, Manchester, on March 21st.

Present: Messrs. J. B. Wolstenholme (President), P. Taylor, W. A. Taylor, Thos. Greaves, T. Hopkin, J. W. Ingram, S. Locke, J. Moore, Chas. Phillips,

A.V.D., and Dr. Dixon Mann, all of Manchester; Messrs. W. Woods, sen., Wigan; W. Whittle, and Arthur New, Worsley; R. C. Edwards, Chester; T. Briggs, Bury; J. H. Carter, Burnley; F. P. Carter, Bradford; J. B. Taylor, Ashton-under-Lyne; J. M. Bennett, Rochdale; F. J. Jones, Leicester; James Hart, Oldham; and Messrs. George Morgan, R. S. Mitchell, and Arthur Leather (Secretary), Liverpool.

Apologies for non-attendance were received from Professors Williams, McCall, and Walley, Major-General Sir F. Fitzwygram, Messrs. W. Woods, jun., H. Kidd, Alex. Lawson, John Lawson, and John Malcolm.

Mr. W. A. Taylor nominated for membership Mr. J. Moore, M.R.C.V.S., of Manchester.

It was decided that the next meeting of the Association take place in Liverpool on the second Wednesday in June; also that a committee consisting of the officers of the Association with power to add to their number be appointed to revise the rules, and that it should meet before and report to the June meeting.

Mr. TEDBAR HOPKIN then read a most interesting and valuable paper on "Roaring." The majority of the members present took part in the discussion which followed.

Mr. F. J. Jones, of Leicester, exhibited several tracheotomy tubes and instruments, which were much admired.

It was resolved that the discussion on Mr. Hopkin's paper be adjourned till the next meeting,

A vote of thanks to Mr. Jones and to the President concluded a very successful meeting.

THE CENTRAL VETERINARY MEDICAL SOCIETY.

MR. HUNTING'S address on "Hereditary Disease and Veterinary Opinions," delivered on 5th April, 1888:—

MR. PRESIDENT AND GENTLEMEN,—Hereditary disease in horses is now a matter of public interest, and is to us a subject of professional importance, and the interest and importance of the question will inevitably increase, now that science is being applied in this direction.

I propose, first, to ask your attention to the question, What diseases are hereditary? And next, to the question of the value of veterinary opinion, and how it may be best applied.

I have tried to classify the diseases said to be hereditary as follows:—

1. Diseases affecting the organs of special sense (those of the ear, eye, etc).
2. Ditto digestion (undefined).
3. Ditto respiration (Roaring, Whistling, and "Broken-wind").
4. Ditto locomotion (such as Spavin and Curb, Splint and Windgalls, Ringbone and Sidebone, etc.).
5. Ditto the feet (Navicular Disease and Laminitis).
6. Ditto the nervous system (Shivering, Epilepsy, and Stringhalt).
7. Ditto the skin (Eczema and Grease).

What strikes one at once, on looking over this list, is the fact that every one of the pathological conditions here named may arise under circumstances in which it is impossible to impute heredity as a cause. If we allow that every one of these conditions may appear without any hereditary predisposition, and simply as the result of extraneous causes, we have to ask and answer the question, "Can you determine by any definite symptoms which disease is hereditary and which is not?" There are, of course, two somewhat different points of view from which we may look at hereditary diseases. We may find them in a young animal, and wish to know their nature, with a view to forming an opinion as to how much, and for how long, the defect will

interfere with usefulness. This is not the point of view I now want your attention to. What I wish to discuss is the significance of a morbid condition in an animal used for stud purposes; and the only two practical questions seem to be, "Is it a serious fault?" "Will it be transmitted?" Let us now consider the diseases usually classed as hereditary.

Organs of Special Sense.—In the human subject diseases of these organs are certainly very often transmitted from parent to offspring. In the lower animals the eye and the ear may be affected with hereditary disease. In dogs, deafness is often hereditary. In the horse, the eye suffers from disease which may be transmitted; even accidental injury to the eye of a parent is sometimes transmitted to the offspring, but it is a question whether in such cases the eye was not diseased prior to the injury.

Cataract is transmissible, and Amaurosis is said to be; but I do not think this rare disease is the subject of sufficiently well-authenticated evidence to enable us to speak positively. Ophthalmia due to injury I should not class as hereditary, but there is evidence of transmission of Periodic Ophthalmia. How shall we say of certain changes in the eye—"Which depends upon accident and which is constitutional?" Blindness is such a serious unsoundness that I should say reject all stud animals suffering from it, or from conditions of the eye likely to produce it. The judges may over-rule such an opinion, when evidence of pure accident or of non-transmission can be adduced by the owner.

Organs of Digestion.—It is remarkable that no definite diseases of these organs show any evidence of heredity.

Organs of Respiration.—There is positive evidence of "Roaring" being transmitted from both sire and dam to the offspring. My experience is not sufficient to enable me to say whether "Roaring" induced in a stallion by Colds, Sore-throat, or "Strangles" is a non-transmissible disease. A great difficulty arises, owing to the fact that hereditary disease, as a rule, only becomes apparent in the offspring at the same age at which it appeared in the parent. We may find a four-year-old free from "Roaring" whose sire is a notorious "roarer"; but the animal shall at five have developed the disease without other appreciable cause. On the other hand, an animal attacked with "Strangles" at four years old may be left a "roarer," though both parents are free from hereditary disease. The infantile diseases of the horse usually appear between the ages of four and five years. About this time, too, appear hereditary diseases; this, too, is the time at which closer artificial surroundings and regular work come forward as possible causes of disease. The difficulty is to determine when a disease is due to external causes entirely, and when such causes act only as exciting causes upon a system predisposed by an hereditary tendency to certain morbid changes.

"Roaring" is very often hereditary, possibly nearly always. It is a most serious unsoundness, and therefore its existence in a stud animal should always be followed by rejection. Of course there are a few cases in which a horse "makes a noise," as the result of patent injury to the bones of the face or to the rings of the trachea. Such a condition I should not consider transmissible. "Whistling" we need not discuss. It is simply a degree of Roaring, and must be judged accordingly. "Broken-wind" is said to be a hereditary disease. It can be produced in a few days by feeding on dry musty hay, and only in old cases is it due to, or accompanied by, structural changes in the lung. I can understand the possibility of an old case being transmitted, but my experience is so slight as not to include a single observation of such an event. We want definite evidence—or rather, perhaps, I should say *I* do.

Organs of Locomotion.—Diseases productive of lameness in the horse are plentiful and various. Their causes are many, and if we can remove any

one of them we shall be doing good work. Amongst the causes we must undoubtedly count heredity, and this can only be met and eliminated by attention to the parents. What diseases are hereditary?

Spavin.—There is sufficient evidence of the very frequent transmission of this disease from parents to offspring. I do not deny that it may arise from external causes in animals whose parents had sound hocks; but as it is such a serious cause of lameness, I should always reject a stallion suffering from it. I should make no allowance because the hocks were otherwise well-formed, as I do not believe that any special form of hock, or any conformation of limb, renders a horse more or less likely to become spavined. Spavins are found in all sorts of horses with all sorts of hocks; the weak narrow hock is not specially liable to spavin.

Curb.—If I find curbs on both hocks in horses which have done little or no work, or are so young that I surmise little work can have been done, I conclude that they are due to hereditary predisposition, and consequently will most likely be transmitted. The best and healthiest horse may develop a curb as the result of a sprain, and one curb in a horse that had done hard work would not induce me to reject him as likely to transmit that defect. As a fact, the term does not indicate liability, but existing disease; the convexity of hocks called "curby" is a curb, and unless the convexity exist I know no condition which can be called "curby."

Splint.—Splints are very frequently—nearly always—due to hereditary causes. A young stallion with splints on both fore-legs occupying the same position on both, about the same form and size on both, may safely be charged with suffering from hereditary disease. Such disease will almost certainly be transmitted, but what if it is? Splints are sometimes a nuisance, very seldom the cause of prolonged lameness, and hardly ever the cause of permanent lameness. I am bound to allow their hereditary nature, but I should very much regret giving such an opinion if I knew it would be followed by disqualification of a horse for stud purposes. Splints are too trivial an unsoundness for which to reject a horse.

"Windgalls.—I very much doubt whether this defect should be classed as a hereditary disease. I have no doubt that its existence in a stallion, unless positive evidence of marked transmission can be adduced, should be treated as a harmless condition.

Ringbone.—I look upon this unsoundness as the very worst cause of lameness commonly met with in horses. My experience does not embrace the use of stallions suffering from Ringbone. If it can be shown on reliable evidence that this defect is transmitted to the offspring, I should certainly reject any stud animal suffering from it.

Sidebone.—With the exception of splint, probably no unsoundness owes its prevalence so exclusively to heredity as Sidebone. It is the bane of big horses, and should be vigorously attacked by the rejection of all stud animals suffering from it.

Diseases of the Feet are too common in horses; some depend entirely upon external injury; some, though directly excited by injury, are only met with in feet the form or structure of which supplies the predisposing cause. To say that conformation is hereditary is only to vary the old formula, "like produces like." Narrow feet, wide feet, and flat feet are formations undoubtedly transmitted from parents to offspring. With less certainty, and in a less degree, are transmitted qualities of hoof. Strong tough horn is a characteristic of some families, as is a dry shelly horn of others. These conditions vary in degree, and may exist without any disease. Unless disease is present, a veterinary surgeon cannot class them as unsoundness. He may call them hereditary conformations of an undesirable kind; but he cannot pronounce them hereditary diseases. It is a very fine line that

separates transmissible conformation from transmissible disease, and each case must be judged by itself.

Corns are certainly not hereditary; they are only bruises, but most likely to occur in broad open feet.

Sandcrack.—If one sandcrack is seen in a foot, the horn of which appeared of good quality, I should not think sufficient evidence existed to warrant me in saying it was likely to be transmitted. If sandcracks in two or more feet were found in conjunction with a hard, dry horn, I should give an opposite opinion.

Laminitis.—No horse suffering from Laminitis is likely to be submitted to veterinary examination. We may, however, be called upon to express an opinion as to feet which have been altered in form as the result of that disease. A flat sole is a conformation probably transmissible; a convex sole is a change of structure due to disease. Is it likely to be transmitted? Would the foal of such a parent have convex soles, or would it be specially liable to Laminitis? I should not disqualify such a horse if it were sound in action.

Navicular Disease.—If I were sure that a stallion suffered from this disease, I should surmise that his offspring would in due time develop the same defect. I think there is sufficient evidence to warrant us in including heredity amongst the causes of Navicular disease; but that evidence is capable of being strengthened by further observation.

Contraction.—A contracted foot is not necessarily a diseased one, nor is it to be looked upon as a predisposing cause of disease. When both feet are contracted we may generally find the cause of the defect in the shoeing. When one foot is contracted it may be the result or accompaniment of disease, but it may be congenital or accidental. A contracted foot, in the absence of any other sign of disease, is not, in my opinion, a hereditary disease, nor even a condition offering any evidence of its probable transmission to the offspring.

Diseases of the Nervous System.—By some authors Stringhalt is said to be hereditary; by others no such cause is given. I have no experience which warrants me in expressing an opinion, so that in practice I should give the doubt in favour of the horse.

"Shivering."—This serious, but somewhat ill-defined disease, is said to be hereditary. I have no experience of it in breeding stock. Professor Williams relates the case of a mare which suffered from "Shivering"; she had three or four colts, each of which became affected in the spine before the age of three years.

Epilepsy in Dogs.—This disease is undoubtedly transmissible, and I have known certain families, no member of which escaped. Some forms of Megrims in the horse are undoubtedly of an epileptic character, and it would be interesting to hear any experience of the effects of breeding from animals so affected.

Diseases of the Skin.—Eczema is in man and in the dog undoubtedly hereditary. In the horse the analogous condition is not often met with, and, personally, I have no experience of it in stud horses. "Grease" is said to be hereditary by some authorities, and the same persons usually call it Eczema. I deny the analogy, and have no reason to believe that "Grease" is hereditary.

As to the value of Medical Opinion, and how it is best applied.—In private practice, our opinion may be asked as to defects in a mare. This is not likely, as the owner of an animal generally knows, or thinks he knows, whether it will pay him to breed or not. He takes the risk, knowing that few hereditary diseases become evident until after the age at which he hopes to sell.

Possibly some day it will become practicable to prevent the use of mares suffering from patent hereditary disease, or at any rate to offer advantages

for the use of sound ones. However, it is something to prevent the spread of hereditary diseases from one parent. At present veterinary opinion is only desired for the male parent, and as the example recently set will now probably be widely followed, it is most likely that our profession will be frequently engaged in giving opinions as to the soundness of stallions. As to the value of such opinion, there cannot be any question. I agree with Professor Axe in thinking that "the practice of submitting horses to veterinary inspection at agricultural and other shows, is the only reliable instrument at our disposal for checking the spread of hereditary disease." Of course such examination must be properly carried out. A sufficient time and a suitable place for thorough examination must be given; the opinion should be of sufficient weight to inspire confidence in the minds of exhibitors and judges. There will always be disappointed exhibitors to find fault, and members of our profession to back them up. This is only the result of our all being human. No man is big enough to give an opinion of sufficient weight, and therefore it is necessary to adopt a system such as Professor Axe has detailed in the *Live Stock Journal* Almanac. The Shire Horse Society determined that the inspection at shows "be relegated to a jury of not less than three veterinary surgeons, one of whom should hold, or have held, a distinguished position at one of the veterinary schools, the other two to be selected by the council of the Society from four veterinary practitioners of eminence, to be nominated by the Professor so chosen." I do not at all say that it is necessary that those chosen should be nominated by the "Professor," and I think that in all local shows local veterinary surgeons should form the majority of the men employed. In some cases it may be possible for veterinary examiners to say that defects found in a stallion are hereditary; in many cases they will only be able to say that they probably are. In some cases the defects found will only be of slight importance, even if they should be transmitted. It is not impossible that some peculiarity may some day be met with about which the veterinary surgeons will differ, and be able to obtain any numbers of backers on both sides. Under these circumstances, I consider the veterinary opinion should not be decisive. It should not be a judicial sentence upon the animal, but only expert evidence to assist the judges, who have also the evidence of conformation, and perhaps absolute performance, to assist them in finally deciding. If the shows adopt the example set them by the Nottingham Show, I should think that they would render their work valuable, and get as much out of it as possible. If they adopted some sort of system of registering not only the result of the veterinary examination of the stallions, but also of the produce; if a book were kept in which the result of such animals' work was registered, the judges would have in the course of a year or two evidence to guide them quite equal to the veterinary opinions which they might get upon the stallion. It has been asked if it is right to condemn a great good horse for one hereditary unsoundness, whilst you honour "a weedy brute" with a certificate of soundness, and perhaps a prize. I do not think it at all likely that a weedy brute would be awarded a prize, and if it were, the fault would lie not with the veterinary surgeons, but with the judges. If a great good horse suffered from an undoubted hereditary defect I should certainly think that he should be rejected. If his owner could be bullied or bribed into having him castrated, so much the better. He might make a grand horse for harness or saddle work, but he is certainly not in his proper place at the stud. There is one more quotation to which I should like to draw attention. Professor Axe says, "Out of show-yard inspections I believe a plan may be devised offering a very near approach to the licensing system. In this connection I would suggest that all stallions four years old and upwards exhibited at our shows, whether drawn for a prize or not, shall be examined by at least two veterinary surgeons, and in the event of their being found

free from hereditary disease, a certificate to that effect shall pass to the exhibitor, signed by the same, and stamped with the seal of the Society. These should be known as certified stallions and divided into three grades; four-year-olds representing the third grade, five years old the second, and six years old the first grade." The only objection that I see to this would be that, if taken simply as stated by Professor Axe, any man who had a stallion, the ugliest, commonest brute on the face of the earth, would put him into the show, not to get a prize at all, but to get one of these veterinary certificates that he was free from hereditary disease. I think that possibly you might come across an animal that it would be as advisable to have castrated on account of its conformation as though it suffered from a large number of developed unsoundnesses. Therefore I should propose that these certificates should be confined to horses "highly commended" by the judges.

Following Professor Axe, again he says, "I am not sure how far it may be practicable to extend this distinction to mares, but if it could be done I feel satisfied that it would in time work incalculable good."

Now before I thought very much about this subject, I imagined that the question of the mares had been overlooked, but I am not at all surprised at officials not tackling the mares. When you look into details, how are you to do it? There is one thing that ought to be done, and I do not see why it should not be, and that is that all owners of subsidized horses should be allowed to refuse mares that are known to be suffering from hereditary affections. I suppose that when a subsidized horse goes into a district the owner is obliged, when the money is offered him, to allow the services of his horse. This is extremely unfair to the animal, and it is more unfair if the Society keep account of his progeny, because he may be obliged to use his horse to unsound mares, and then get credit afterwards for it being the father of unsound offspring. By giving the owner the option of being able to refuse unless the owner of the mare can produce the certificate of two veterinary surgeons that the mare was not suffering from hereditary disease, I think that help would be given, at any rate in a small way, towards putting a stop to some of the hereditary diseases transmitted by the female.

MIDLAND COUNTIES VETERINARY MEDICAL ASSOCIATION.

(*Continued from page* 370.)

Digestibility of Foods.

While it is necessary that food should possess a large percentage of albumenoids and carbo-hydrates in due proportion, their digestibility is a matter of equal, or even greater importance. For information on this latter subject we are much indebted to German experiments. The principal conclusions arrived at have been embodied in the "Chemistry of the Farm," by Warrington. Amongst other results, these experiments show the relative digestibility of various food stuffs by different classes of animals; also that the digestibility of a given food by the same animal may be sometimes considerably increased by the addition of an article rich or poor in the particular constituents deficient or abundant in the food in question. Thus the digestibility of potatoes, which are particularly rich in starch, will be increased by supplying along with them a nitrogenous article, such as bean meal, etc., and *vice-versa*. In this way a judiciously mixed diet will usually give the most satisfactory results.

The digestion of the various food stuffs by horses is shown by the following table, which gives some of the results of the experiments before mentioned:—

Food.	Proportion of each constituent digested for 100 supplied.				
	Total Organic Matter.	Albumenoids.	Fat.	Soluble Carbohydrates.	Fibre
Pasture Grass	62.1	68.8	13.4	65.8	57.0
Meadow Hay, good ...	51.7	64.3	23.5	56.9	42.6
Ditto do. ordinary ...	46.3	56.4	18.8	51.7	37.3
Lucerne Hay	57.9	74.3	3.2	70.2	39.0
Oats	72.0	87.0	78.2	76.6	25.6
Beans	87.4	86.2	8.5	93.4	69.3
Maize	90.9	77.6	63.0	93.9	100.0

The marked superiority here shown in the digestion of grass as compared with that of hay is a striking fact which will be again alluded to in the detailed reference to food stuffs. It is also highly important to notice the more perfect digestibility of the legumes and cereals relative to that of either grass or hay. In the total of digested organic matter, maize stands at the head of the list; while in digested carbo-hydrates it is equal to beans, and superior to oats. It will be seen, however, that in digested albumenoids maize is inferior to both oats and beans.

Relation of Food to the Horse and his Work.

In horse feeding both the horse and his work have to be considered, and due allowance made for the kind, quantity, and quality of the food to be used. It is obvious then that no fixed diet can be made, either in the quantity used, or in its albumenoid ratio. The requirements of the horse vary with his class. His food must be directly proportionate to his work. As one horse will do more work than another, so the quantity sufficient for one will be insufficient for the other; so also the food required by a horse doing moderate work will be insufficient for the same horse doing hard work; neither should horses doing fast and slow work be fed alike, the former requiring a more nitrogenous diet than the latter. Again, young growing horses, or horses in low condition, will naturally require more food than horses fully matured, and in fit condition, and as the work varies with the season of the year, so will the food have to vary. But as an average diet can be made for men at similar occupations, so can an average diet be made for horses. Thus if ten horses in one stable be doing similar work to ten horses of like weight and condition in another, an equal allowance of food may with all safety be apportioned to each stable. No large bulk of innutritious food will make up for a lack in quality, and no highly concentrated one, however rich, will compensate for a deficient quantity. Hay usually and straw occasionally provide the requisite bulk, as well as a portion of the nutritive materials. Large quantities of innutritious provender overload and derange the digestive organs, and are particularly inapplicable for horses on account of their small stomachs. In regulating the food allowance, a careful and intelligent man will readily notice any necessity for an increase, or the utility of a decrease; but in addition he ought to take due notice of the albumenoid ratio; thus although horses doing moderate work will maintain condition on oats, it has been frequently shown, and among horsemen is universally acknowledged, that if horses have to undergo long-continued severe exertion either at slow, or fast work, *oats alone* are incapable of supplying the nitrogenous matters required to replace tissue waste; and that a horse continuously doing such work will lose condition, and deteriorate if fed with them alone; but if his food be

made more nitrogenous by the addition of such an article as beans, then the same horse, doing the same work, will regain his lost condition and fitness. As with oats so with an equivalent mixed food, such as a mixture of 4 lbs. maize and 1 lb. beans. This mixture will maintain a horse doing moderate work, but in itself is unable to supply the necessary materials for real hard work; but if with this, as with oats, the percentage of nitrogenous matter, in other words its albumenoid ratio, be increased, as by the addition of a sufficiency of beans, the requisite food may be obtained to supply the wants of any horse for any work he is capable of performing. Economic feeding, in other words the giving of such provender as will maintain the horse in the best condition and obtain the greatest amount of work at the least possible cost, may be achieved by the use of a food consisting of a mixture of oats, maize, peas, beans, barley, hay, etc., the mixture varying in its proportions from time to time as the prices of the articles composing it fluctuate in the market, provided always a due albumenoid ratio be maintained.

Having briefly touched upon the relation of the different classes of food with regard to the principles of feeding, we may now proceed to the consideration of the various food materials in somewhat greater detail.

Green Food.—It is highly advantageous to give a proportion of green food during the season, in the form of clover, rye, grass, or vetches. The safest and most economical plan is to cut it up and give it amongst the ordinary chaff, but where impracticable to cut it frequently, the green food may be given separately: we have more frequently given it in this way than any other, our usual plan being to begin with a small quantity for the first day or two, afterwards increasing it to the regular allowance. If large quantities are given when wet with dew or rain, it is liable to produce flatulence or purgation. This is also sometimes the case with newly-mown very succulent grass grown on water meadows, or on sewage land. The use of green food is not only a most agreeable and beneficial change, but is also an economical one.

Hay.—As we have already indicated, hay is an essential element in our system of horse feeding. It is therefore necessary for those who have to use it to be able to discriminate between good and bad hay. Among practical men it is universally acknowledged that there is a wide divergence in the nutritive value of different samples. Meadow hay differs from rye grass hay, and clover hay from both, but the time and manner of harvesting influences its feeding properties to as great, and in many cases to a much greater extent, than do the different grasses and clovers of which it is composed. We also find the quality largely depends upon the soil on which it is grown, and is affected by the character of the manuring. The relative value of hay cut at different stages of maturity has recently been the subject of much scientific investigation, and in this field of research we are again indebted to the Germans. British Agricultural Scientists have however also turned their attention to the subject, and in an able paper by Mr. Wilson, of Stirling, published in the Highland Society's Transactions for 1886, he clearly shows that there is a far wider variance in the chemical composition of the same grasses cut at different stages of development, than between different varieties of grass cut at the same stage. The general conclusions arrived at are, that as the plant matures, the proportion of water, nitrogenous matter, fat, and ash decreases, while the proportion of carbo-hydrates increases. Now as albumenoids are much more valuable than carbo-hydrates, and the greater the percentage of albumenoids in a given sample of hay, the more easily and perfectly will if be digested—it follows that as the plant grows older, its nutritive value is not only diminished, but also its digestibility. This partly explains the reason why animals should fatten so much more readily when fed on grass alone than on hay alone. Hay that in making has suffered much from rain and exposure, and has also undergone fermentation, contains much

less soluble matter than when well made, and is deteriorated accordingly; while hay carried too soon, and unduly fermented or mow-burnt, not only loses in value, but may in addition cause derangement of the digestive and urinary organs. The influence of soil and manuring on hay is universally acknowledged; many farms being noted for the feeding nature of their grass, others having an unenviable notoriety for growing herbage of an inferior quality. On good soils, grasses such as cocksfoot, timothy, rye grass, meadow fescue, smooth and rough meadow grass, foxtail, etc., usually predominate; on the other hand, on cold wet soils, we find water meadow grass, oat grass, quaking grass, couch grass, sedges, rushes, and also sorts of weeds to a greater or less extent. In the selection of hay we have therefore to see that it has been harvested when in bloom and has not run to seed; that while harvesting no unnecessary exposure has taken place, nor undue fermentation in the rick; also that a preponderance of good grasses be present.

Good hay is of a bright and greenish tint and pleasant odour, has a firm crisp feel, tough flexible stem of medium length, with heads showing inflorescence, and any seeds present firmly adherent to the spike. All bleached, brittle, mouldy, bad-smelling, or highly-fermented hay should be rejected, but if only slightly fermented a truss or two cut up with other hay seems to give the whole an agreeable and palatable flavour, and produces a distinctly appetising effect. Clover hay should be bright, firm, and flexible, free from mould and dust, and have most of the leaves adherent to the stem.

No new hay should be used before November. Prior to then it has not the feeding or conditioning effect of old hay;. and besides, is more liable to produce digestive derangement.

I cannot unite with those who praise the superiority of rye-grass and clover hay over good meadow hay. In practice we find that a horse will consume a greater weight of the former than the latter, to maintain a like condition and do the same work.

Straw.—Straw is frequently cut up to a limited extent with hay. For this purpose good oat straw is decidedly superior to wheat-straw, but the latter is said by good authorities to be the best fodder for horses with defective wind. Chaff made from soft hay is improved by a slight addition of straw, and when so mixed most horses eat it more readily. Whether wheat or oat-straw be used it should be bright, dry, sweet, and free from weeds, but, however fine the straw may be it will be inferior in nutritive value to good hay.

Bran.—Many people use bran regularly amongst the horse food, especially where only a limited stud is kept, but its value as a food bears no relation to its cost. From its appetising, corrective, and laxative properties, it is given with benefit to horses off work from any cause, and frequently we find sick horses retain a certain appetite for it after they will scarcely look at any other kind of food. This is not the case with all, for we occasionally meet with horses that will barely taste bran under any circumstances. Alone, or better still in conjunction with linseed, bran makes a capital mash for Saturday night. Indeed, instead of following the custom of giving various medicaments, usually classed as alterative medicines, it has been our custom for years to give every horse under our care a linseed and bran mash every week end. To this, and to the fact that our usual daily allowance of provender is regularly reduced on Sundays, I attribute the practical immunity of our stud from Colic and Lymphangitis.

Linseed.—Linseed is frequently lessened in value by having an admixture of various kinds of seeds. It should be clean and sweet, have a bright colour, and be of uniform size. It is rarely used regularly as a food, but is chiefly given to invalids, especially to those suffering from throat, chest, or kidney affections, in the form of tea or gruel, or along with bran in mash. For unthrifty, hide-bound horses, and horses with defective digestive powers, it

may be used with beneficial results in the raw, uncrushed state, mixed with the food.

Beans.—The beans in common use are either English or Egyptian. The former are usually preferred, but they have been largely replaced by the Egyptian, which are cheaper. If their price were the same, I should prefer the English, partly, probably from prejudice, and partly on account of their slightly more agreeable favour. In practice it is very difficult to detect any material difference in their feeding value, and this most certainly bears no relation to their difference in market value. It has been our usual custom of late years to give the beans mixed in the proportion of 1lb. of English to two of Egyptian. Whichever kind is used they should be old, sound, dry, and clean, and not less than 60lbs. to 64 lbs. per bushel in weight. Beans are far too nitrogenous to be given for any length of time alone, but they are very valuable in mixture, and are the usual means by which we increase the albumenoid ratio of food deficient in nitrogenous matter.

Peas.—Peas frequently replace beans. As already shown, they have much the same proportion of nitrogenous constituents as beans, and are only very slightly inferior to them in feeding properties. When feeding with them we generally replace 1lb. of Egyptian beans with 1lb. of old Canadian peas, thus making a mixture of 1lb. each of English beans, Egyptian beans, and Canadian peas. Peas are often accredited with producing flatulence, but they only do this if used in excess, or if new or soft in condition. Like beans, they should be old, hard, sound, sweet, clean, and free from weevils.

Oats.—Oats have been for long looked upon as the grain, *par excellence*, for horse food, and if the choice be limited to one kind of grain this opinion is undoubtedly correct. This is not only proved by the test of practical experience, but also verified theoretically by their chemical analysis, which shows oats to possess the chief food constituents in better-balanced proportions for the horse's requirements, than any other single grain used for horse food. But although oats are superior to the other grains separately in this respect, in a former section we have endeavoured to show that *they* may easily be improved upon, and a mixture readily obtained containing the requisite constituents in a more justly proportioned ratio than oats do.

In the selection of oats more skill and experience are required to obtain the best value for the money spent, than any other grain used for feeding purposes. Not only do we find a wide range in the amount of husk present, which may vary from 28 per cent. to 38 per cent., but it is not unusual to see short, plump, bright-looking oats, highly inferior to ordinary medium-sized ones of indifferent colour, inasmuch as the former may be soft, new, or bleached, and possess a fusty or sulphured smell, whereas the latter may be old, sweet, unbleached, and in good hard condition. It is immaterial whether oats be white or black; they should be of uniform size, heavy, not under 40lbs. per bushel, clean, hard, and sweet; while all soft, new, bleached, kiln-dried, or musty oats should be rejected.

Barley.—Samples of barley also differ widely in character. The finest ones are too expensive for horse food, but those of good medium quality may often be obtained at a less cost than any other feeding grain. If used to any extent it is said to produce irritation of the digestive organs and skin. We have frequently given it in varying proportions up to one-fifth of the whole bulk of corn, and never saw any bad results. Possibly its deleterious effects may be produced when used in larger proportions.

Maize.—Maize has been largely used as an article of horse food for at least twenty years. Lately its use for this purpose continues to increase. Unaided it will maintain cart horses, if not very severely worked, in fair condition, but it is too deficient in nitrogenous matter to form a good food alone, and should always be given mixed with peas or beans. The varieties in use are

round and flat. It is immaterial which is given, provided they be old, sound, perfect corn, and if both round and flat possess these qualities, price may be our only guide. It has been already shown theoretically that a mixture of maize and beans of equivalent feeding value to oats may be easily obtained. This, it is to be distinctly understood, only refers to the feeding of mature animals, as the small percentage of ash present in maize renders it unsuitable in large quantities for the feeding of growing stock. And if due attention is paid to this exception, I am of opinion that the statement is not only *theoretically*, but *practically* true. This statement may not be accepted by many, but I have no hesitation in making it, and do so after ten years' practical experience in horse feeding, with the full conviction of its accuracy. During this time I have use maize and oats concurrently with each other, mixed with beans in various proportions; and increased experience simply strengthens the opinion here given. Prior to 1878 I was as keenly opposed to, and sceptical of, the value of maize feeding as any man could be—considered it useful for the production of fat, but incapable of supplying the wants of hard-worked horses, forgetting that the only constituents to be considered in horse food were the fat-formers and flesh-formers; that if the former was present in superabundance in maize, so was the latter in beans, and therefore all we had to do was to bring the knowledge derived from chemistry to bear on the mixture of our horse food, and try this by the test of practical experience. As before stated, practice in this case has amply vindicated theory.

In discussing horse feeding it is not infrequent to hear men—aye, even veterinary surgeons—assert that oats, or oats and beans, are the only food fit for horses. Such remarks can only proceed from an imperfect acquaintance with the scientific principles of feeding. On hearing them I have sometimes wondered if the same people would maintain that oatmeal in one or other of its forms was the only food fit for man. If confined to it they would in all probability soon wish a change. When doctors draw up a table of dietary, they consider the albumenoids, fat-formers, and ash; and if these are in sufficient quantity, in due proportion, and digestible, they do not object whether these constituents are in buttermilk and potatoes, oatmeal and milk, or roast beef and plum pudding. As with man, so with his servant the horse, the more varied his food the more completely will it supply his requirements, provided always the afore-mentioned conditions be maintained, the food be in the right physical condition, and possess no deleterious properties.

At a recent meeting of the Association, when discussing maize, a member objected to its use for horse food on the ground that maize feeding occasionally produced Grease. Now Grease is frequently seen where no maize is used for food, and in predisposed animals may occur on any food, especially if used in excess. My own experience is entirely opposed to this objection, as in a stud of 270 horses which I have the honour to superintend, and which from the accompanying statement you will see have been largely fed on maize, only *two* cases have been seen in *seven years*, and one of these was suffering from it before the introduction of maize feeding. Whatever be the fault of maize feeding when used alone, admirable results are obtained in conjunction with beans and oats in due proportions, and I shall have much pleasure in demonstrating this to any member who has the time and may be willing to inspect our stud; and feel confident their opinion will be that horses in better condition or more free from Grease or any skin disease, it would be practically impossible to find.

Shortly since a firm trying to be economical commenced to use a food principally consisting of new maize and peas, and when the only results that could be expected followed, viz., loss of condition and fitness, together with the occurrence of cases of gastric derangement, the use of maize was thrown

up in disgust, and a return made to the exclusive use of oats, with the attendant consequence of an increased cost in the provender bill; and so the disparagement and condemnation of maize feeding follows, instead of that of the parties responsible for its use, who must have been ignorant of the principles of horse feeding. I need scarcely say it is not by such haphazard means, but by the practical application of scientific principles, that great economic results have been achieved. As with most other problems, so with the study of true economic feeding, success is the reward of, as it is merited by, combining practice with science; and as Mr. Goschen aptly puts it, "Nothing can be more deplorable than that men who have to deal with economic problems should be, as is too frequently the case, divided into theorists who have no knowledge of practical details, and practical men who shrink from or despise the study of general principles."

Water.—A sufficient supply of pure water is essential for the maintenance of health, and if it is frequently and regularly given, the horse himself will usually be the best judge of the quantity he requires. To ensure a constant supply, many people from time to time have had water-troughs placed in the stable alongside the manger, but in the majority of these cases this plan has been discontinued, and the old system of supplying the water, either in a common trough or by bucket, returned to. The cause of failure has been the proximity of the water to the corn: as a consequence, food gets into the water and water into the food; acid fermentation supervenes amongst the unconsumed provender, which if thrown away is so much waste, and if eaten is liable to produce digestive derangement. This difficulty would be done away with by having stables fitted with loose boxes instead of stalls, with the water-trough fixed at one end of the box, and corn-manger at the other. We have two stables, containing eighteen horses each, in boxes, where a constant supply of water has been provided for the last four years, with the best possible results, and the entire banishment of such complaints as Colic, Indigestion, or Impaction. If water be deficient there is not only imperfect elimination of effete material from the system, but the digestion of the food is interfered with, and Impaction of the bowels not infrequent. I may be permitted to mention a well-marked case of the latter. A horse worked by B—— had several attacks of Colic, with Impaction, from which he ultimately died. The next horse B—— had was also subject to Impaction, but was disposed of in 1884 on account of an accident. The third horse, driven by the same man, was similarly attacked. Feeling now assured that the fault lay with the man, he was pressed on the question of watering. Ultimately he admitted its irregular supply. He was then told his dismissal would follow the next case of Impaction; since then three years have elapsed without a single recurrence.

The supply of water should be limited or withheld for a time when horses are excessively heated, also when stabled after doing a hard day's work in particularly cold weather. In my opinion, neglect of this precaution, especially in the latter case, is a more fruitful source of Chill and Congestion of the lungs than any other. The necessity of giving water before food, except in the instances just mentioned, will be readily admitted when the small size of the horse's stomach is borne in mind. If water be withheld until after feeding, it is in most cases almost physically impossible for both food and water to be retained in the stomach, consequently a portion of the food is carried into the intestines undigested, where, besides being a loss to the animal, it is a source of evil.

The importance of water being pure, and free from organic matter, is so universally acknowledged that I may be excused from discussing it on this occasion.

Preparation of Food.—It is now generally conceded that cooked food for

working horses is a mistake. We have already indicated that oats, maize, &c., are characterised by possessing a particularly large percentage of digestible carbo-hydrates, consequently, the more perfectly these grains are masticated and mixed with saliva, the more perfect will be their digestion. Now, although a certain proportion of the undigestible fibre of food be rendered digestible by cooking, this gain is more than counter-balanced by the loss through the food being swallowed without much mastication, and only partially mixed with saliva; besides this, horses fed on cooked food are soft, and in less fit condition than those fed on raw food. No one would think of giving a hunter cooked food, neither should a cart horse be fed on it. If heavy loads have to be moved or long journeys taken, it is essential that the horse doing so should be fit, and that his muscles should possess the requisite tone for bearing the strain upon them, and this can only be obtained on raw food. The old plan of feeding on corn and uncut hay separately, has been replaced by the much more economical one of giving corn with cut hay. Much of the grain when given alone is swallowed unmasticated, passes through the alimentary canal undigested, and is voided unchanged among the fœces. In its passage it probably produces irritation, but cannot possibly be nutritive. Long-hay feeding is particularly wasteful, and portions of it are usually trodden down and destroyed; by mixing the corn with the hay both of these evils are prevented. It is physically impossible for horses to swallow oats mixed with hay unmasticated, therefore it is optional whether they are crushed or not; we do not crush them, yet an undigested grain is never seen in the excrement. Beans, peas, and maize *should be cracked, not crushed.* The loss from animal force expended in their mastication described by some writers, in my opinion bears no relation to the gain derived by their more perfect mastication.

Horses at work should be fed at least every four hours, as, from the anatomical reasons already referred to, small, frequent, and regular feeding is much more beneficial than larger quantities at longer intervals, therefore horses out for the day should always be provided with a nose bag.

Bedding.—Straw is universally considered the best bedding for horses, but its cost and limited supply have of late years caused it to be largely replaced by sawdust and peat moss. If supply were guaranteed, and cost no object, nobody would use either of the latter if they could get the former. Sawdust is not only cheaper than straw, but is also cheaper than moss, hence we employ it almost exclusively, and during the seven years of its use we have never once seen a deleterious effect produced by it.

In conclusion, permit me to draw your attention to the accompanying statement of the actual results of feeding the Birmingham Corporation Horses, the insertion of which in this paper the Chairman of the Stable Committee has kindly sanctioned. A copy of this statement may be had by any member sufficiently interested in the matter. The tables composing it have been extracted from the Corporation Books, and their accuracy may be absolutely relied upon. It shows the average consumption of food and bedding per horse per day, and per horse per week; the total consumption for each of the last seven years: also, the actual cost of these per horse per week for each year. To show the type of horses fed, a column has been introduced giving their average weight; this is obtained from the average of two weighings each year, the one at Christmas, the other at Midsummer. Another column has been added showing the albumenoid ratio of the food actually consumed, a matter which we have endeavoured to show is of much importance in all questions of feeding; it is based on the Table of the Chemical Analyses of Food Stuffs previously given.

BIRMINGHAM CORPORATION STABLE DEPARTMENT—HORSE FEEDING, 1881 TO 1887.

Year	Average No. of Horses.	Avge. Weight of Horses.		Cost per Horse per Week.	Albumenoid Ratio of Food Consumed.	Total Corn Consumed.	PROVENDER.																BEDDING.					
							Beans.		Peas.		Maize.		Oats.		Barley.		Bran.		Linseed.		Green Food.		Hay.		Sawdust.		Straw.	
	No.	Lbs.		s. d.		Lbs.	Bags	Lbs.	Bags	Lbs.	Bags	Lbs.	Bags	Lbs.	Bags	Lbs.	Bags	Lbs.	Bags	Lbs.	T. C. Q. Lbs.		T. C. Q. Lbs.		Bags.		T. C. Q. Lbs.	
1887	272·96	1,628	Total Consumption for Year	..	...	..	1,271	215	677	89	3,851	130	2,517	94	..	..	484	28	72	84	97 17 1		550 18 2		13,223		57 7 3	
			Per Horse per Week	11 6·97	1 : 5·5	132·23	..	23·38	..	11·55	..	64·75	..	28	..	..	..	3·50	..	1·06	.. .. 15·75		 84		..	·93	.. .. 8·75	
			" " " Day	..	..	18·89	..	3·34	..	1·65	..	9·25	..	4	..	..	..	·50	..	·15	.. .. 2·25		 12		..		.. .. 1·25	
1886	271·12	1,619	Total Consumption for Year	..	..	..	1,216	248	933	220	3,651	72	2,476	64	102	44	509	84	40	84	89 5 2		534 17 1		13,408		52 0 3	
			Per Horse per Week	11 6·30	1 : 5·5	134·47	..	22·40	..	16·59	..	52·65	..	27·30	..	1·40	..	3·99	..	·59	 14		 84		..	·95	.. .. 8·19	
			" " " Day	..	..	19·21	..	3·20	..	2·37	..	8·95	..	3·90	..	·20	..	·57	..	·08	 2		 12		..		.. .. 1·17	
1885	264·65	1,615	Total Consumption for Year	..	..	..	1,897	159	58	48	3,658	178	2,461	28	204	4	491	28	10	60	96 17 2		551 0 2		12,641		50 9 3	
			Per Horse per Week	11 11·08	1 : 5·7	135·52	..	35·98	..	1·05	..	63·63	..	27·79	..	2·94	..	3·99	..	·15	.. .. 15·75		.. .. 89·39		..	·91	.. .. 8·26	
			" " " Day	..	..	19·36	..	5·14	..	·15	..	9·09	..	3·97	..	·42	..	·57	..	·02	.. .. 2·25		.. .. 12·77		..		.. .. 1·18	
1884	261·62	1,590	Total Consumption for Year	..	..	..	1,654	216	433	200	3,320	120	2,560	67	191	152	485	..	4	25	104 14 2		531 18 1		12,363		58 17 1	
			Per Horse per Week	12 3·38	1 : 5·7	134·19	..	31·78	..	7·98	..	58·38	..	29·26	..	2·80	..	3·92	..	·06	.. .. 17·15		.. .. 87·22		..	·91	.. .. 9·66	
			" " " Day	..	..	19·17	..	4·54	..	1·14	..	8·34	..	4·18	..	·40	..	·56	..	·01	.. .. 2·45		.. .. 12·46		..		.. .. 1·38	
1883	238·48	1,571	Total Consumption for Year	..	..	..	1,009	110	1,302	202	1,755	211	3,698	36	324	67	410	84	3	187	121 19 2		479 14 0		9,558		64 9 1	
			Per Horse per Week	13 4·79	1 : 5·5	136·99	..	21·21	..	26·29	..	38·88	..	46·41	..	5·25	..	3·71	..	·06	.. .. 21·91		.. .. 86·38		..	·77	.. .. 11·62	
			" " " Day	..	..	19·57	..	3·03	..	3·77	..	4·84	..	6·63	..	·75	..	·53	..	·01	.. .. 3·13		.. .. 12·34		..		.. .. 1·66	
1882	234·21	1,517	Total Consumption for Year	..	..	..	474	86	1,172	156	1,815	218	3,748	64	356	48	425	28	4	49	96 0 1		442 4 2		9,000		115 4 2	
			Per Horse per Week	13 4·68	1 : 5·8	122·99	..	10·15	..	24·15	..	35·63	..	47·81	..	5·88	..	3·85	..	·07	.. .. 17·57		.. .. 81·13		..	·73	.. .. 21·07	
			" " " Day	..	..	17·57	..	1·45	..	3·45	..	5·09	..	6·8	..	·84	..	·55	..	·01	.. .. 2·51		.. .. 11·59		..		.. .. 3·01	
1881	224·08	1,528	Total Consumption for Year	..	..	..	881	162	783	...	2,718	201	2,584	122	..	..	410	..	5	94	41 13 2		431 6 2		4,522		194 2 0	
			Per Horse per Week	14 1·81	1 : 5·9	131·32	..	19·82	..	16·93	..	56	..	34·60	..	..	..	3·94	..	·09	.. .. 8.50		.. .. 87·78		..	·41	.. .. 40·38	
			" " " Day	..	..	18·76	..	2·83	..	2·42	..	8	..	4·94	..	..	..	·56	..	·01	.. .. 1·21		.. .. 12·54		..		.. .. 5·64	

The PRESIDENT said he should be glad to hear a discussion on Mr. Malcolm's paper after they had time to look over the tables which he had distributed amongst them.

Mr. OLVER said that looking at the sheet it was seen that Mr. Malcolm had reduced the cost, and at the same time increased the weight and condition of his horses. Generally he agreed with the essay, but demurred to the statement that oats alone did not meet all the requirements of horses doing hard work. In the West of England oats aloue were used, and no peas or beans given, and he believed that oats could get horses into thoroughly fit condition. In speaking of the preparation of the food, he agreed that raw food was best, but could give many cases where delicate horses had done remarkable well on cooked food. Sufficient attention was not paid to the water supply. Many horses suffered from Colic until the water was changed. No water was so good as rain or very soft water.

Mr. TAYLOR (Manchester) said they would all admit the value of the figures placed before them. It was generally believed that maize produced Colic, but he knew places where no other grain was used; sometimes it was cracked and sometimes whole, and neither Colic nor Indigestion was seen. The daily allowance for each horse was 12 lbs. maize, 2 lbs. bran, and 14 lbs. hay. The horses were van horses, and frequently did thirty miles per day. In winter he approved of roots taking the place of green food. He should like to know whether with the decrease in cost and increase in weight of Mr. Malcolm's horses the work had decreased.

Mr. Councillor PARKER: No, increased.

Mr. HOPKIN (Manchester) said that in feeding much depended on whether it was economy or appearance that was aimed at. Beans he considered the most dangerous food for Colic and Flatulency. They should be given with great care, for in his experience they were more dangerous than peas. He did not agree with giving green food, neither did he approve of cooked food. He believed in giving water before food, except when the horse was heated. In one case, at a large colliery, the horses suffered from Colic, which puzzled the veterinary surgeons in charge. The mischief was ultimately found to be due to the chopping machine, which was provided with two or three riddles over which the food passed, and finally all that was left was the hard stalk of the hay. The riddles were removed, and linseed mixed with the food, after which no more Colic was seen.

Mr. TRIGGER complimented Mr. Malcolm on his able paper. In his experience horses were more liable to Colic when fed on Indian corn than on oats. He advocated cooked food for horses with defective wind. One mare he instanced that had hunted for three years on cooked food alone; but while giving it in such cases he did not approve of it for whole studs of horses. As to water, horses should be allowed plenty of water if good digestion was to be obtained.

Mr. SMITH, Mr. OVER, and Mr. CARLESS gave their experience of feeding hunters.

Mr. STANLEY said that in feeding, the age of the horse was to be considered, as after five years old more beans and less oats were required.

The PRESIDENT said he felt the discussion must now cease, as time was passing. He would caution all against using new oats; they led to no end of mischief. Mr. Malcolm deserved the thanks of the Association for his able paper, but it was only what they expected from him.

A unanimous vote of thanks was then passed to Mr. MALCOLM for his paper, who, in reply, touched on the matters raised by the various speakers, and concluded by acknowledging the vote of thanks.

Mr. OLVER moved and Mr. SMITH seconded that the paper be printed. Carried unanimously with applause.

On the motion of Mr. CHAMBERS, seconded by Mr. PRITCHARD, Stafford was selected for next place of meeting.

The members afterwards dined together.

YORKSHIRE VETERINARY MEDICAL SOCIETY.

THE spring quarterly meeting was held on April 18th at the North-Eastern Hotel, York. Mr. W. Lodge, Dewsbury, a Vice-President, was voted to the chair; the following members were present: Messrs. H. Snarry and G. T. Pickering, York; J. Atcherley, Harrogate; Geo. W. Carter, Keighley; A. W. Briggs, Halifax; J. E. Scriven, Tadcaster; and the Secretary (W. F. Greenhalgh). Dr. Spencer (President of the York Medical Society), Mr Scott, M.R.C.V.S., Harrogate; Mr. FitzEassie, M.R.C.V.S., York; Dr. White, Leeds; Mr. A. G. Todd and Mr. D. Mitchell were present as visitors.

Apologies for non-attendance were received from Professor Axe, and Messrs. G. E. Bowman, F. Danby, J. Clarkson, T. Fletcher, H. Cooper, T. Thornton, A. W. Mason, Joseph Carter, and P. Carter.

The minutes of the last general meeting were read and confirmed, as also the minutes of a special meeting held in Leeds on the 12th of March.

The SECRETARY read a letter which he had received from Mr. Teal, one of the executors of the late Mr. W. Broughton, thanking the Society for the grant they had made for the benefit of the deceased gentleman's family.

On the motion of the SECRETARY, seconded by Mr. CARTER, Mr. McCarmick, of Leeds, was elected a member of the Society, and on the proposition of Mr. G. T. PICKERING, seconded by Mr. H. SNARRY, Mr. Ridley, of Bellerby, was also elected.

Mr. SNARRY nominated Mr. Best, of Thornton-le-dale, and Mr. Rickaby, of Guisbro', Mr. BRIGGS nominated Mr. Aderton, of Halifax, and Mr. GREENHALGH nominated Mr. Scott, of Harrogate, as members of the Society.

Mr. A. W. BRIGGS drew the attention of the meeting to a communication which he had addressed to the VETERINARY JOURNAL, on the subject of "The Vaccination of Puppies for the Prevention of Distemper," and which appeared in the April number of that journal. He asked for an expression of opinion from the meeting, as to whether such an operation was general or in any way beneficial, as he confessed that he had never heard of such a practice.

Mr. PICKERING said he had on various occasions performed the operation of vaccinating puppies with vaccine, when he had been requested to do so by clients, as a preventive of Distemper. He admitted that he absolutely knew nothing as to whether such an operation was a preventive, but he had performed the operation simply because he was requested to do so.

Mr. CARTER asked if, as the result of this inoculation, the typical pock had been formed.

Mr. PICKERING thought that it always took pretty well.

Mr. BRIGGS asked Mr. Pickering if he did not think it was unprofessional to perform an operation simply because he was asked to do it, although at the same time not believing in the utility of such.

Mr. PICKERING said that some time ago a gentleman who was staying in York, and was a large breeder of dogs, had told him that he always had his dogs vaccinated, because he firmly believed in it as a preventive, owing to the fact that every puppy he had had so treated never had Distemper.

Dr. SPENCER remarked that at the wish of some friends he had vaccinated three dogs, and neither of the three had been affected with Distemper. Still he could not see there was any inference to be drawn from that, and should decline to express a decided opinion on the matter.

Mr. CARTER: Might I ask you if the dogs you vaccinated showed the typical pock?

Dr. SPENCER: Yes, they showed the pock very distinctly.

The CHAIRMAN: What age were they?

Dr. SPENCER: The pug would be four months old, the other two were young bull-dog puppies.

Mr. BRIGGS said his communication, which had appeared in the VETERINARY JOURNAL, was originally addressed to Dr. Fleming, asking him for an expression of opinion on the subject. As he had received no answer, and the communication had been published, it was evident, he thought, that that gentleman did not wish to give his opinion on it.*

Mr. GREENHALGH thought that vaccination with ordinary vaccine could be of no benefit as a preventive of Distemper. He could not see any analogy between Variola and Distemper, and why they should inoculate with the virus of one disease in order to prevent an entirely different one in all its characters he could not see. He had had some experience among young dogs, and had been a large breeder, but his experience was, that if puppies were properly treated after being taken from the mother, a very small percentage of them would be affected with the disease to any appreciable extent.

Mr. LODGE thought that, to a great extent, the prevention of the disease depended upon the feeding of the animals.

Mr. BRIGGS said, if the operation was of any benefit, the profession was ignorant as to what Distemper was, and he believed there was much to learn of this complaint.

Mr. FITZEASSIE could see a connection between the two diseases.

The SECRETARY then drew the attention of the meeting to the proposed Horse Tax, and pointed out that the medical profession were apparently going to be exempted. He would like to have some expression of opinion as to whether veterinary surgeons should not be included in the exemption.

The CHAIRMAN thought that as the Secretary of the R.C.V.S. was taking some steps in the matter, a representation from the meeting should be made to him to the effect that the veterinary surgeons of Yorkshire considered that the profession could, in all fairness, claim equal exemption. He moved a resolution to that effect.—This was seconded by Mr. Carter and carried.

Mr. SCOTT mentioned the fact that he had been in communication with Mr. Goschen on the subject, and that gentleman had promised the matter his consideration, and that he wished to deal with it on equitable terms.

On the proposition of Mr. BRIGGS, seconded by Mr. CARTER, it was decided that the next meeting should be held at Leeds, at which Dr. Spencer, of York, has promised to read a paper on "Animal Parasites," illustrated with lantern views.

Mr. BRIGGS then proceeded to read a paper on

"*Some Observations on the Recent Outbreak of Epizoötic Influenza in Horses.*"

MR. PRESIDENT AND GENTLEMEN,—At the recent annual meeting of this Association, held in Leeds, I had the temerity to volunteer a paper for discussion to-day, little thinking at that time, how difficult and onerous a task I had undertaken to perform.

The choice of a subject for my paper I found to be a matter of great difficulty and hesitancy, and even now, that I stand before you, I am afraid

* We have no knowledge that such an opinion was asked for privately. If it had, a response would certainly have been given, to the effect that inoculation with vaccine virus would not prevent dogs taking Distemper. This has been demonstrated times without number, and was insisted upon in "Veterinary Sanitary Science and Police," in the section devoted to the disease (Vol. II.). The malady is due to contagion only, and if dogs are not exposed to infection they will not be affected.—Ed. *V. J.*

many of you will condemn that choice, on the ground that the subject-matter has been threshed thoroughly dry. And if I endeavour to show that such is not the case, then the onus of the task—to which I have just alluded—falls upon my shoulders; and here comes in the hesitation which one, like myself, comparatively young in the profession, must necessarily experience when venturing to expound one's views before a body of scientific gentlemen, like this, met to discuss those views.

However, in spite of these obstacles I determined to read a short paper on Influenza—Epizoötic Influenza as it has recently presented itself to us in the West Riding of Yorkshire, finding its location principally in our towns and large villages; decimating the ranks of our equine friends, and playing sad havoc with the constitutions of many of the survivors.

I shall be as brief as possible, believing that far more benefit arises out of the *discussion* of a short paper than out of the *reading* of a long one. In fact, I am not an advocate for the reading of papers on scientific or learned subjects at all—so many objections are there to the practice.

The reading of a very long paper, besides being a severe task to the essayist, entails that amount of close attention, effort of memory, and severe strain of the several senses on the part of the listeners that renders it at once wearisome, incapable of being rightly followed and unproductive of good.

Again, all men are not gifted with an inflection of the voice suitable to the reading of a paper, and here again creeps in the weariness and monotony tending to reduce the value of the production as far as discussion is concerned.

All papers for discussion should, where practicable, be printed and distributed amongst those who are about to attend the discussion at least fourteen days prior to the date of such discussion. In this way only, to my mind, can an adequate and profitable discussion follow an essay.

This course is adopted by the N. V. Association. Might I suggest its practicability to this Association? Or would the expense be too great? We are always more or less pinched for time at these meetings, and I think most of you will agree with me that much of it is occupied in the *reading* of the essays—many of which are necessarily dry and tedious to the listeners. I particularly invite discussion upon this part of my paper.

I cannot allow this opportunity to pass without drawing your attention to the somewhat novel position in which we find ourselves to-day, and urging upon you all to exert, to the utmost extent, your powers of persuasion with your brother practitioners who are not already members of the Association to join our ranks. The advantages to be gained thereby are so obvious that I need not allude to them.

It is said that "a rolling stone gather no moss," but we have decided upon this migration (if I may use the word in a local sense) in the hope of upsetting that aphorism so far as it applies to us. In other words we are endeavouring to augment our ranks by taking our meetings to the doors of those who would not previously attend them.

This step is not altogether an innovation, inasmuch as it was adopted, I believe, soon after the foundation of the society—now many years ago. Why the practice was discontinued I am unable to say, but we felt at our last meeting in Leeds that the time had come when we should afford better opportunities for attendance to those practitioners who are so widely scattered over the face of this vast county. I sincerely trust those gentlemen will appreciate this movement and give us that support we are now seeking.

It was simply natural in deference to the respect we bear towards our worthy President that we should decide upon York as the venue of our first meeting, and I think I may be excused in saying that York may congratulate itself upon the honour so conferred upon it.

Apologising for this digression I will at once go back to the subject-matter of my paper.

Firstly, then, allow me to say that I object to the nomenclature of this disease. There can remain no doubt in the minds of observant practitioners that under the term "Influenza" we include a *class* of diseases rather than an individual and particular complaint.

Its complications are so numerous and varied that I think it is high time for a close investigation to be made with a view of differentiating the various phases, and giving to each phase a correct and isolated title.

Personally, I dare not venture upon this step; but I would strongly recommend the adoption of the suggestion thrown out by Prof. Axe at the July 1884 meeting of the National Veterinary Association held in the Victoria University at Manchester.

In the discussion upon Influenza Prof. Axe said—"Whilst I have been sitting here, I have thought that a large amount of labour and time might be spared if, instead of going over the old track, over and over again reiterating statements made by our forefathers, we were to appoint a committee of investigation on the subject of Influenza. If we were to open an inquiry on a scientific basis, we should not then, as Mr. Taylor has said, be in the dark on the question throughout all time. If the matter were carried out in a proper spirit, we should disperse those clouds of obscurity which prevent us arriving at fixed conclusions."

So far as I know, this suggestion made by Prof. Axe was not adopted; yet I know of no other association than the National Veterinary Association more capable of carrying out that suggestion to a definite and profitable end.

So far as the history of Influenza is concerned, I need say no more than that since 1727 it has raged at various periods of time and in varying severity, both as a sporadic and epizoötic affection, throughout the length and breadth of Great Britain.

I come now to what is by far the most important part of my subject, and that is the nature and causes of the disease. And here I wish you to bear in mind that I base my remarks upon the recent outbreak of Influenza, as we have observed it—I believe in almost all parts of Yorkshire. If Influenza has a typical form, surely this outbreak, *par excellence*, afforded every possible opportunity for research.

If I were asked for a definition of Influenza, I should say that it is an infectious fever, affecting animals of all ages, whether placed under the operation of the most rigid dietetic and sanitary laws, or housed in badly-ventilated and badly-drained stables, and poorly and improperly fed. It affects indiscriminately animals of both sexes, whether they be the property of the highest aristocrat or the poorest huckster, and is noticeable by a sudden nervous depression; a marked increase of internal temperature and congestion of either the respiratory or digestive (often both) mucous tracts. These appearances are varied according to the particular phase of the disease with which the patient may be affected. Sometimes there is marked congestion of the lungs, at others pneumonia, pleurisy, serous exudation, bilious complication, and either diarrhœa or constipation.

Now, with regard to the causes in operation for the production of the disease, I desire you to take notice that in defining Influenza I did not make use of either of the terms *specific* or *contagious*.

I have come to the conclusion that the recent outbreak was neither specific nor contagious. I take it that a specific disease must have a specific and tangible cause, must run a specific course, and terminate in one or more specified ways.

I draw a distinction between infection and contagion, and I will tell you why I believe the disease to be infectious and not contagious.

During the recent outbreak I noticed that for the most part, where a large number of horses were congregated together (and of course offering the best field for investigation) the disease laid hold of those animals simultaneously, and not consecutively, as would be the case in a specific and contagious malady—as witness, *e.g.*, Small-pox.

I have also noticed that not only were the animals in any given stable attacked together, but that a great number of the horses of the whole district, covering a radius of two or three miles, were affected concurrently, and in the same manner. Does that point to a specific and contagious malady?

Moreover, I observed that very few of the cases ran the same course, but on the contrary, as I have pointed out, in one patient catarrh of the head and throat would be the predominating feature, whilst in another acute lung congestion; in another pneumonia or pleurisy, whilst in another congestion of the liver would be most marked.

Again, I have seen convalescence take place in one patient in forty-eight hours, in another a week, whilst in a third two or three weeks would elapse, and so on.

Most contagious diseases can be induced by inoculation. Where is the evidence of Influenza so produced?

A specific, unlike a sporadic, disease cannot have its course materially arrested. Yet how often have cases occurred during this outbreak where, on first visiting the patient, the temperature has been as high as 107° Fahr., and by the judicious use of diffusible stimulants, and other general attentions, the thermometer has registered twenty-four hours afterwards 102° Fahr., or even a degree less than that, and the animal has been able to resume work in a few days. Are these cases of coincidence, or are they true instances of arrestation of the disease?

Again, I observed that the epizoötic, after some two months' residence with us, vanished as rapidly and mysteriously as was its advent. Unlike most specific and contagious diseases, it was not overcome by veterinary, sanitary, and hygienic measures, slowly, and by degrees, but the cases dropped off the visiting-list as suddenly as they had appeared upon it a month before.

I maintain that all these facts point to one conclusion, that the atmosphere is the medium in which the virus, whatever that virus may be, is conveyed. If the virus were conveyed by water or food then would the disease be localised and easily traceable.

I am of opinion that, so far as this outbreak is concerned, the cause lay in some peculiar, yet undefinable, condition of the atmosphere, in all probability produced by the protracted drought of the preceding summer and autumn months. At any rate the disappearance of the disease coincided with the coming of the dry frosty weather, and it disappeared in such a manner as left little doubt in my mind that the infective material was in the air.

Now, I know that these arguments and convictions of mine are not those of very many of our highest veterinary authorities, yet I believe I have expounded the views of such practical men as Professors Pritchard and Williams and many others.

Many of you are probably better acquainted with the details of the recent outbreak than your humble servant; most of you must have come in direct contact with it, and I want you, in the discussion to-day, to put on one side, as far as possible, the views and opinions of other men and argue the matter as you, yourselves, have observed it.

I promised to be as brief as possible, and I feel sure I have said enough to rouse a fairly good discussion.

With regard to the pathology, treatment, and morbid anatomy of the malady; well, I feel that these are generally accepted, and practised as laid

down in our text-books, and I do not propose to enter into them further than to remark that I am a strong believer in diffusible stimulants, and I almost invariably give 2-dram doses of Ammon Carb., in the drinking water every eight hours for the first day, modifying the dose as soon as advisable. If there is chest complication I apply a stong mustard plaster to the walls of the thorax, or, in preference, where practicable, hot blankets. I also administer, where indicated, doses of pot. nit. and magnes. sulph.

I am a great advocate for the administration of milk, beef tea, eggs, port wine, etc., in cases of severe prostration, and have seen this practice followed by the best results.

It is bad practice, however, to forcibly drench your patients, more particularly where chest complications are present; in one case the patient fell down and died almost immediately from suffocation.

Carbonate of Ammonia may be given in the drinking water, the patients being so feverish that they readily drink anything cold.

In conclusion allow me to thank you for your kind attention and indulgence, and to say that if I have contributed matter worthy of discussion, I am well satisfied.

Mr. CARTER said he had listened with great pleasure to the paper, but for himself he failed to see how the disease was infectious and not contagious. He had had many cases of Influenza in his practice during the spring, and found the disease commenced usually with horses that were travelling from Keighley to Bradford, Halifax, Leeds, and other large towns. Horses so travelling contracted the disease from others they met on their journeys, and on returning home the disease spread to other stables in the vicinity. He believed it depended greatly upon the condition of an animal's constitution as to whether it took Influenza from another animal, and although he had known cases where every animal in a stable had not been infected with the disease, surely that was scarcely an argument to bring forward in proving that the disease was not infectious. He thoroughly agreed with the treatment laid down by Mr. Briggs.

Mr. PICKERING agreed with Mr. Briggs in some of the ideas he had propounded, but not in others. He believed Influenza was both an infectious and contagious disease, and that in some cases atmospherical influence played a not unimportant part, though he had found the disease to exist in badly as well as first-class ventilated stables. Age, he considered, was immaterial, as he had seen it in animals of all ages, from three to twelve years. He mentioned a case in which all the young horses on a farm contracted the disease, but, strange to say, not one of the cart-horses, although stabled but thirty yards distant, was affected. The temperature he found varied from 104 to 107 degrees. He remembered no case in which the bowels were affected.

Dr. SPENCER said the paper they had heard was extremely suggestive, not only with regard to the Influenza disease; it raised very wide questions. Mr. Briggs objected to the name Influenza as being an erroneous one, but he thought the great thing was that they should understand thoroughly what was meant by the name given to a disease, whatever it was. Influenza was a disease which prevailed epidemically, such as Small-pox had recently done in London, Leicester, Sheffield, etc. It occurred in waves.

Mr. SNARRY had found in many cases that the bowels were affected, and said that he had administered doses of linseed oil with the greatest possible success.

The CHAIRMAN objected to the use of linseed oil in cases of Influenza.

Mr. ATCHERLEY expressed a similar opinion.

Mr. GREENHALGH said the form Influenza had taken in Leeds, so far as it had come before his observation, was no discharge from the nostril, very

little from the eyes, no cough. To every one of the animals treated by him during spring he had given a pint of linseed oil as the first dose, and he had not lost a single animal. Influenza took so many different forms that it required some discrimination as to the course of treatment.

Mr. FITZEASSIE differed from Mr. Briggs when he stated that Influenza in some cases ran only three or four days. He found in every case some disturbance for a week at least. With regard to the linseed oil treatment, while not pledging himself to agree altogether with it, he could not see that it could do any possible harm. He considered the disease was epizoötic. He had known cases on a farm where one animal had been affected, then another, and three or four months elapsed before the next case occurred. If that was due to atmospheric causes, it lasted a long time.

Mr. SCOTT liked the idea of giving oil, and had found its use of great benefit.

It was then decided to postpone the further discussion of the paper to the next meeting.

Mr. CARTER proposed "That in future any paper which is to be read before the Yorkshire Veterinary Medical Society shall be printed at the expense of the Society, and that the Secretary be requested to forward a copy to each member a fortnight or ten days before the date of the meeting." He said he had been induced to move the resolution owing to the difficulty and inconvenience of expressing an opinion on a subject at such short notice, and of the unnecessary labour entailed in making notes as to the various matters touched on by the compiler of a paper in the course of the reading. He understood the cost of printing would not be great.

Mr. BRIGGS seconded the resolution, which was carried unanimously.

A vote of thanks to the Chairman closed the proceedings.

THE WESTERN COUNTIES VETERINARY MEDICAL ASSOCIATION.

THE fifth general annual meeting of the above Association was held at the Rougemont Hotel, Exeter, on March 29th, T. Oliver, Esq., the President, in the chair. There were also present: Messrs. W. Penhale, Holsworthy; J. A. Collings, Exeter; A. C. Stewart, Cardiff; A. J. Down, Stafford Peverell; C. H. Golledge, Sherborne; J. P. Heath, Exeter; A. H. Oliver, Devonport; S. Burton, Torquay; C. Parsons, Launceston; G. H. Elder, Taunton; and the Secretary. Apologies for inability to attend the meeting were received from Messrs. W. P. Chase, R. Ferris, C. C. Hoadley, T. Endle, R. E. L. Penhale, and J. H. Penhale. Mr. A. E. Michell, St. Austell, was proposed a new member of the Association.

The Secretary and Treasurer's annual report showed the Society to be gaining ground, both financially and numerically as regards members.

Mr. J. P. HEATH, on being unanimously elected President for the ensuing year, said he was the oldest member of the profession present. During his term the duties of the office should be carried out to the best of his ability.

Messrs. J. A. Collings, T. Oliver, C. Parsons, and H. W. Thomas were elected Vice-Presidents. Messrs. Penhale and Elder were re-appointed Secretary and Treasurer.

The PRESIDENT then called on Mr. A. H. Oliver to read his paper on

SWINE FEVER.

Mr. OLIVER said—It is not my intention to enter largely into the history of the disease or its pathology. It is now a generally recognised fact that Swine Fever is caused by a micro-organism, but the exact species of the bacterium is still a subject of controversy among pathologists. Some two years ago I had the privilege of witnessing this disease largely in the county

of Wiltshire, where, at certain periods of the year, more particularly during the summer months, it seems to take an epizootic form.

Swine Fever may be defined to be a highly contagious and infectious disease of a febrile character, common to Great Britain, Ireland, and America, and known under a variety of terms—Red Soldier, Blue Sickness, Measles, Pneumo-Enteritis Contagioso (Klein), and in the county of Wiltshire as Pig Fever; in America under the names of Hog Cholera and Intestinal Fever.

In dealing first with the causation of this disease, it has been held by some authorities to arise from contagion and infection only, and that no amount of bad management, filth, want of drainage, or decomposing food are sufficient of themselves to induce it. Now, gentlemen, that it is a highly contagious and infectious disease I am quite willing to admit, but that bad sanitation, want of drainage, and decomposing animal matter do not play important factors in bringing about a disease which, although I dare not state to be the so-called Swine Fever, must, however, be pardoned if I confess that I have been at times entirely at a loss to account for the origin of a disease which, although to call Swine Fever would be altogether at variance with the latest scientific research, has seemed to me, however, to resemble it very much, both in its clinical features during life and its pathological appearances after death.

It has very often struck me on going to a farm and finding pigs presenting all the symptoms of this disease, and on inquiry of the owner have found that these pigs have been bred on his farm, that no fresh pigs have been brought to his place, and never recollects it to have occurred in his part of the country before; I have been led to ask myself the question, How can this possibly have been brought about? And although quite willing to admit the possibility of the recognised germ being carried by some unknown agent of communication, yet on making a strict examination of the styes where they have been kept, and noticing the filthy condition of them, have thought that possibly too little notice has been taken of these conditions in accounting for this disease, and probably, also, more may be attributed to such bad sanitary conditions than their being merely accelerating agents. That there is a disease of the pig of a Typhoid character closely allied, if not a different species of the so-called Swine Fever, which, to my mind, explains nothing, preferring the term *Pneumo-Enteritis Contagioso* (Klein). I am quite aware that pathologists do not look upon the Typhoid Fever of man to be analogous to this Swine Fever of the pig, basing their reason in the differences manifested by the pathological appearances. May not these, however, be accounted for by the great differences in the two animals—viz., man and pig? Here I may state that, with all due respect and admiration to the great studies made lately by scientists in the Germ Theory of Disease, I must, however, be pardoned in saying that I am afraid that, led away by their enthusiasm, they are apt to take too little notice of the clinical history of a disease, the great tendency now being to explain disease by the presence of some bacillus or bacterium. I am quite willing to admit that by far the greater number of cases of Swine Fever are produced by contagion and infection.

And now, gentlemen, I shall endeavour to give you the symptoms of this disease as they have presented themselves to me. On examining pigs affected in the first stages, I have noticed that there is a great inclination to lie about and huddle together if there are many pigs. Loss of appetite, staggering gait, rapid breathing, sometimes husky cough; and I may say that I noticed on one occasion that Laryngitis was the first symptom, then diarrhœa or constipation, depraved appetite, and increased thirst, with or without pimples on the skin. If, however, I have seen them when the disease has been of longer duration, they have presented a wretched appearance. Rapid emaciation, with marked diarrhœa, a mucoid purulent discharge running from

the eyes, causing them very often to be quite closed, standing on the toes, due to paralysis of the flexor muscles; in a semi-comatose condition, often uttering delirious grunts; on being made to rise, marked paralysis of hind extremities. In fact, after noticing the symptoms of a well-marked case, there should be no difficulty in detecting this disease. But it happens, however, that one occasionally meets with cases in which there is great care required in diagnosis before giving an opinion as to whether pigs are the subjects of this disease or not.

I shall now remind you of the morbid anatomy of this disease as it has presented itself to me on making a *post-mortem* examination. Some experimentalists have, I believe, produced the disease by the inoculation of fluid taken from the peritoneal cavity, and a microscopic examination of the cultivated liquids has gone to prove that they are the growth and development of a kind of bacterium, having in itself all the characters of the Bacillus Anthracis, but I believe there still exists a doubt as to the exact species of bacterium which produce this disease, and, therefore, I do not think that I can do better than refer you to the recent pathological experiments conducted by Dr. Billings, Director of the State University of Nebraska, U.S.A., which experiments I have no doubt many of you have read, as they have been recorded in the VETERINARY JOURNAL of February, October, and November, 1887, and have furnished us with a lot of recent pathological research. There is one paragraph which I have taken the liberty to bring before your notice: it occurs on page 362, vol. xxv., of the November Journal, and runs thus: "That it is of great practical interest to the veterinary profession whether the disease in England described by Klein as Pneumo-Enteritis Contagioso, and that described by Schutz, of Berlin Veterinary School, as Infectious Pneumonia, called in America Hog Cholera, or Swine Fever, are due to one and the same micro-organism, or whether these two, apparently so similar organisms in their external characteristics, still differ in their pathological action sufficiently to account for the enterical lesions in the American disease, which Schutz does not mention having seen in Germany, though they correspond to those described by Schutz in all their chief essentials; so that you see, gentlemen, there is at present still room for doubt as to whether we have not a variation of species of one and the same disease, possibly influenced by climate, breed, and conditions to which the pigs are exposed. On touching on the *post-mortem* appearances of this disease, I do not think I can do better than give you an account of the *post-mortem* appearances which presented themselves to me on making an examination of a pig sixteen weeks old, which had been ill three weeks. There was no discoloration of the skin; there, however, may have been during the earlier stages. External appearances of bowels natural, saving a few dark red patches seen through the peritoneum, where I found internal ulcers of the most advanced stage. Mesenteric glands congested; stomach, externally, normal—internally, small and pale. The intestinal track was somewhat thickened throughout; the cæcum and the ileo-cæcal valve likewise. The colon presented a great deal of effusion under the mucous membrane; ulcers, petechial spots, and patches scattered through the colon; rectum somewhat congested. The kidneys presented a pale appearance, covered with petechial spots; their structure did not appear much altered from the normal. Liver—Glisson's capsule studded with cloudy patches, attached to the diaphragm by a partially organised exudate of apparently a serous nature. The structure of this organ seemed somewhat softer than natural. Many of the lobules of the lungs were in a perfect consolidated condition. The lungs were attached to the parietal pleura, and to the anterior face of the diaphragm by a semi-organised exudate; heart pale, and of a soft consistence, free from any sub-endocardial extravasations. I

may here say that I have never before noticed that the lungs and liver adhere to the diaphragm and costal pleura, as in this case. Pigs killed in the earlier stages of this disease, I have generally found present the following appearances. Skin may, or may not, be discoloured; when so, I have noticed it to present a purple rather than the scarlet discoloration so often described; stomach and bowels congested in varying degree; Peyer's patches and solitary glands becoming considerably enlarged and prominent, and standing up above the surface. They are of a greyish-white or palish-red colour, with vascularity of the surrounding membrane. Liver has invariably a number of cloudy swellings on Glisson's capsule, its structure generally being somewhat softened: the kidneys sometimes presenting petechial spots on external surface, but in the earlier stages often appear healthy, as far as I have been able to judge. The heart sometimes presents sub-endocardial staining, sometimes remaining free; lungs generally consolidated in a greater or lesser degree, according to the length of duration of the disease, the costal pleura often showing extravasations beneath it. To clear the country of this disease, I would advise compulsory slaughter of all animals we are satisfied are affected. The remainder I would have left in a place to themselves, given plenty of good food and exercise, not confine them in styes badly ventilated and undrained, where, probably, the slaughtered ones have been kept. Should advise the cleaning-out of all styes, with thorough application of lime-wash, to which has been added some carbolic acid, or other disinfectant.

Mr. HEATH congratulated the essayist on the excellency of his paper from a scientific as well as practical point of view. He quite agreed with him in thinking that there were two kinds of Swine Fever, one arising from drinking impure water, uncooked house waste, and bad sanitation; the other from contagion. In the one case the disease was very similar to human typhoid, in the other the lungs also became affected. As an aid to diagnosis he relied very much on the thermometer, as there was always a considerable elevation of temperature; the voice of the pig, as the disease goes on, becomes altered. He believed permanganate of potass to be an excellent remedy for Swine Fever, and related several instances where its use was clearly attended with great benefit. He believed if herds of pigs were generally treated with this agent, the course of the disease would be stayed.

Mr. GOLLEDGE said errors in feeding, especially where quantities of salt or soda became mixed with the food, would produce a disease very similar to Swine Fever. But there were distinctive differences, which soon became apparent to the experienced practitioner. When pigs died from eating salt the ulcers in the intestines were more like scalds than the deep characteristic ulcers of Swine Fever. Another difference also was of importance; in the former case, the ulcers were always situated on the rugæ of the mucous membrane. When investigating for this disease too much reliance must not be placed on the thermometer, for although it was highly important to know the temperature, yet it must not be forgotten that a considerable elevation also takes place for many other diseases. He did not believe in the spontaneous origin of Swine Fever; no combination of filth, bad air or water, without the actual introduction of the virus itself, would, in his opinion, produce it.

Mr. BURTON, from his experience, was able to agree with nearly all the main principles of the paper, which he thought very able and practical. Boracic acid was a very good remedy for Swine Fever. He believed the disease might arise spontaneously; when it was propagated by infection, the germs were generally inhaled. Heat, filth, and bad sanitation tended very much to its spread. More care should be taken in disinfecting markets.

Mr. ELDER said it was very difficult at all times to trace the origin of an

outbreak to contagion. He was beginning to doubt whether the disease might not arise spontaneously. The mortality from Swine Fever was very great. Rats, he believed, often conveyed the contagion; they were always migrating from one sty to another.

Mr. OLIVER did not agree that the disease was spontaneous; it often existed in undeclared places, and this because unsuspected centres of infection.

The SECRETARY said it was unanimously agreed to by all present that the only way to get rid of the disease was by the stamping-out system—wholesale slaughter of all pigs on the premises, both diseased and healthy, destruction of all woodwork near the ground in styes, also feeding-troughs, and thorough disinfection; by this means only could the disease be cleared from the country, and in the end was by far the most economical. He did not entertain the idea that it had a spontaneous origin, for there were still large tracks of country where pigs were kept in every conceivable form of filth, and yet no Swine Fever appeared amongst them.

After replying to the various observations, Mr. Oliver received a marked and cordial vote of thanks for his paper, and the President for his able and courteous conduct in the chair.

It was resolved to hold the September meeting in Plymouth.

The members then dined together, and a most enjoyable evening was spent.

W. PENHALE, *Secretary.*

ROYAL (DICK'S) VETERINARY COLLEGE.

THE annual presentation of prizes to the students of the Royal (Dick's) Veterinary College took place on May 16th, in the council chambers. Sir Thomas Clark occupied the chair, and there were also present Sir James Gowans, Bailies Cranston, Turnbull, Walcot, and M'Donald; and Councillors Macpherson, Tait, and Macdougald.

His LORDSHIP said they had met together for the purpose of distributing the prizes gained by the students of the Royal (Dick's) College. He was glad to know that many things which had happened during the past year were so extremely satisfactory. The building was now completed, and the appliances in the hands of the students were such that there was no other institution so well founded as the Royal Veterinary College with these appliances, and, in addition, they had a number of first-rate professors, who were able to teach their veterinary science to them by the highest methods. The studies of the students had been quite up to the average of the best years. At this time last year there were some differences amongst the examining board, the professors, and the students also, but these differences were a matter of the past, and he would never have referred to them at all if it had not been that the state of harmony which now existed was so different in contrast with the state of things which existed last year. The Examining Board had been very much changed, and one circumstance had occurred which was calculated to bring about a desirable relationship between the Examining Board and the students in time to come. The head of the Royal Scottish College of Veterinary Surgeons was a gentleman in whom every one had absolute trust. The behaviour of the students during the past year was everything that could have been desired. He had to congratulate the students and professors upon the changes that had been brought about during the past year in the Examining Board, both in its construction and the method in which the examinations had been conducted. They had to congratulate the Town Council, as the governing body, and the whole body of professors and students, and public, upon the admirable manner in which the college was conducted. His lordship then called upon Professor Walley to make a few remarks concerning the distribution of the prizes.

Professor WALLEY said the distribution covered a period of three years—from the session of 1885-86 to the present time. There was another thing worthy of mention, and that was, they were very pleased to say they had, acting in concert with all the Scottish colleges, been enabled to do away with the entire summer session. (Cheers.) They found that teaching their students during hot weather was rather too much.

Bailie CRANSTON said he believed the new buildings were second to none. He hoped it would better their condition, and enable them better to pursue their studies.

Sir JAMES GOWANS said he did not know that there was any profession in which the duty was higher than the care of attending to animals. He had no doubt that their little brush had passed away, and it might tend to make matters smoother in the future.

The prizes were then distributed by the Lord Provost, after which Professor WALLEY proposed a vote of thanks to the Highland Society for their continued support and the number of medals for class competition. It was an encouragement for men to study a subject in which the Highland Society took such a deep interest. Bailie CRANSTON seconded the motion.

Professor WALLEY also proposed votes of thanks to Mr. Harris for his gold medal and to the managers of the Edinburgh Street Tramways Company for allowing the students the privilege of attending the stables at the sick cases.

Dr. AITKEN moved a vote of thanks to the Lord Provost for the great interest and care he had taken in the college during the time he had been engaged in the affairs of the city. The motion was unanimously agreed to, and the proceedings terminated,

The following is the prize-list:—Mr. Mullan, Dublin, gold medal for chemistry, silver medals for materia medica, junior anatomy, and morbid anatomy; Mr. Mullan also carried off the £21 bursary for the highest percentage of marks in the various classes since 1885; Mr. Gold, gold medals for cattle pathology and veterinary medicine and surgery, and silver medal for botany, 1886; Mr. Clayton, silver medals for veterinary medicine and surgery, cattle pathology, and silver medal from the Edinburgh Veterinary Medical Association for the best essay; Mr. Breakell, Garstang, silver medal, chemistry, for session 1885-86; Mr. Braes, silver medal for general merit in the various competitions, 1885-1888; Mr. Clarkson, bronze medal for general merit in the various competitions, 1885-1888. Medals for the present session:—Mr. C. E. Gray, gold medal for physiology; W. Ackroyd, gold medal, senior anatomy; Hewison, gold medal, chemistry; William Hewison, silver medals for junior anatomy and botany; A. Dowdall, silver medal, physiology; H. S. Clark, silver medal, chemistry; Bell, silver medal, junior anatomy; amateur competition in veterinary medicine and surgery, bronze medal, William Jobson; honourable mention, William Tod.

THE NEW VETERINARY COLLEGE.

ON May 16th, Principal Williams distributed the prizes to the successful students in the lecture hall of the College. He was received with prolonged applause, and said he had great pleasure in distributing the prizes at the termination of another session. He could say that the work of the session had been up to the average. The papers in the competition for horse pathology were above the average, and he could safely say these were the best papers he ever had read in his life. The session had been a longer one than usual, but he thought that the new arrangements would be of great advantage to the students as well as to the teachers. They also gave the students from the present time till October to see the practice of practitioners in the town or country, and great advantages would accrue to those

who embraced the opportunity. He then referred to the necessity of grappling with the elementary subjects of the course and to the successful prosecution of their studies during the session. The students had won the first two Fitzwygram prizes, and nearly carried off the third prize. In the course of distributing the prizes, the Principal said they were very much indebted to the Highland Society. He could not help referring to his own teacher, Professor Dick, because he was about the only teacher who represented the old school. Professor Dick must have been a brave man; for three mortal years he lectured to only one student. It required a man of great determination to do that. It was encouraging to them to know that for many years the class had been gradually growing. This was his twenty-first year in Edinburgh, and great improvements had occurred since then. The classes had become larger and larger, until now they numbered nearly two hundred students. There was plenty of opening for all, as all parts of the world were calling out for veterinary surgeons. The veterinary surgeons had increased their weight, and responsibility, and position together within the last few years. Their profession had been recognised by the Government, and a number of their professional brethren had been decorated with a variety of honours. In conclusion, he thanked them very much for their attendance, and trusted that all who had to go in for their examinations would pass successfully.

Professor Lewis proposed a vote of thanks to Principal Williams, after which the prizes were distributed.

The following is the prize-list:—Principal's £20 prize, S. Cameron and W. Eaton—equal; horse pathology, Alfred Bate; cattle pathology, James Murray; morbid anatomy, Alfred Bate; senatus of museum, Alfred Bate and F. W. S. Clough; anatomy, E. F. de Yong; physiology, E. J. de Yong; histiology, C. Ward; chemistry, J. H. Parker; practical chemistry, John Cockburn; elementary anatomy, J. H. Parker; botany, J. H. Parker; veterinary hygiene (Principal Williams' medal), T. H. Middleton; Professor W. O. Williams' medal, J. R. C. Smith; Edinburgh Veterinary Medical Association medal, James Murray; for practice, J. Appleyard and J. Borthwick—equal. Certificates of merit—A. Bate, F. W. S. Clough, G. Craik, G. Scoon. First-class Certificates for Practice—J. Appleyard, Borthwick, A. Bate, F. W. S. Clough, G. Craik, G. Scoon, H. M'Kee, T. Lilico, J. Dunnett, W. F. Egan, W. Eaton, J. Murray, H. R. Love, F. W. Granfell, W. Kidd, E. Wilkinson, A. Shawcross, J. F. Carson, F. L. Carter, and J. W. Schofield. Second-class Certificates of Merit—A. Duvall, J. Rigby, S. Cameron, E. H. Schofield, J. Garland, and G. M. Yardley. Last Summer Session—Botany, J. F. Clanchy; medical chemistry, J. Parker and E. F. de Yong—equal; and materia medica, E. F. de Yong.

ONTARIO VETERINARY COLLEGE.

THE closing exercises and presentation of prizes in connection with the Ontario Veterinary College, took place in Richmond Hall on May 2nd. Dr. Smith, Principal of the College, presided. Besides a number of ladies, who occupied seats on the platform, there were present—Dr. Daniel Wilson, of Toronto University; Dr. Thorburn, Dr. Canniff, Dr. Duncan, Rev. Dr. Wild, Ald. Dodds, Frankland, Ritchie, Piper, Swait, Morrison, and Irwin, Dr. Shaw, Dr. Cowan, Dr. C. Smith, and Dr. Lloyd.

The CHAIRMAN, on rising to welcome the visitors, was greeted with loud and long-continued applause. No doubt, he said, they were all anxious to hear the names of those who had passed their examinations successfully. The names of more than a hundred gentlemen were read out.

SENIOR.

Pathology—F. Booker, silver medal; N. H. Allis, second; J. E. Wilson, third. Honours—Ackland, G. T.; Anderson, J. P.; Auslin, D. G.; Balliet, A. H.; Burger, Will; Campbell, W. D.; Carpenter, Tom; Chase, J. M.; Cook, F. W.; Clute, H. P.; Cornell, C. P.; Coutts, J. J.; Gruber, C. D.; Gable, E. E.; Hill, James A. T.; Inger, J. D.; Hoffman, W.; Johnston, B.; Kennedy, J. T.; Lawson, J. A.; McGregor, J. D.; McDonald, F.; Merillat, L. A.; Paget, H. A.; Redhead, R.; Rowe, H. M.; Rossiter, E. W.; Rowlin, G. H.; Russel, W. T.; Shepard, E. H.; Sherwick, F. N.; Smith, R. V.; Smythe, T. H.; Thompson, L. H.; Vanantwerp, E. A.; Walker, J. J.; Wicks, A. J.

Anatomy—Silver medal, Will Burger; second prize, J. J. Coutts; third prize, E. H. Shepard. Honours—N. H. Allis, A. H. Balliet, T. Babe, J. W. Bland, F. Booker, T. Carpenter, J. M. Chase, E. Edwards, J. J. Findlay, E. E. Gable, A. G. Highway, E. W. Hagyard, C. W. Haworth, B. Johnston, A. W. Jackson, A. E. James, J. A. Lawson, L. A. Merillat, E. D. McQueen, G. H. Rowlin, H. M. Rowe, E. W. Rossiter, W. T. Russel, Payson Schwin, F. N. Sherrick, A. W. Smith, Ed. Shafter, A. A. Vanantwerp, J. J. Walker, J. E. Wilson, A. G. Wicks.

Entozoa—Prize, B. Johnston. Honours—Will Burger, J. M. Chase, James Campbell, J. J. Coutts, C. W. Haworth, S. W. Jackson, J. T. Kennedy, S. D. McGregor, L. A. Merillat, F. N. Sherrick, A. G. Wicks.

Dissected Specimens—Gold medal given by the Toronto Industrial Exhibition Association, Will Burger; second prize, 30 dols., Joseph Thompson; third prize, 20 dols., A. H. Balliet.

Physiology—Lawson, John A., silver medal; Merillat, L. A., second; Burger, W., third. Honours—Booker, F.; Campbell, James; Chase, J. M.; Coutts, J. J.; Haworth, C. W. J.; Powell, J. N.; Rowe, H. M.; Shepard, E. H.; Thompson, T. H.; Wicks, A. G.

Microscopy—Rowe, H. M., first; Carpenter, T., second; Coutts, J. J., third. Honours—Campbell, J.; Chase, J. M.; Cornell, C.; Findlay, J. J.; Haworth, C. W. J.; Inger, J. D.; Jackson, A. W.; Johnston, B.; Merillat, L. A.; Power, R. H.; Smythe, T. H.; Thompson, L. H.; Wicks, A. G.; Wilson, J. E.

Chemistry—J. J. Coutts, first; O. Rush, second; H. M. Rowe, third. Honours—J. M. Chase, G. Collins, J. J. Findlay, B. Johnston, C. D. Morris, John E. Wilson.

Best General Examination—Gold medal, given by the Ontario Veterinary Medical Association, E. Payson Schwin, Indiana, U. S. Honours—N. H. Allis, A. H. Balliet, F. Booker, W. Burger, T. Carpenter, B. Johnston, J. D. McGregor, L. A. Merillat, H. M. Rowe, J. E. Wilson.

Materia Medica—First prize, B. Johnston; second prize, L. A. Merillat; third prize, J. J. Coutts. Honours—G. F. Ackland, J. P. Anderson, S. H. Balliet, F. Booker, W. Burger, F. W. Cook, I. Carpenter, James Campbell, H. O. Dengler, E. Edwards, A. W. Jackson, A. E. James, J. B. Kennedy, J. C. S. Lawson, D. E. McLean, J. J. Miller, C. D. Morris, J. H. Powell, W. T. Russell, E. Schuftor, E. H. Shepard, F. N. Sherrick, E. P. Schwin, R. V. Smith, A. G. Wicks.

JUNIORS.

Anatomy—Silver medal, H. H. Jenkins; second prize, M. M. Leach, J. W. Manchester (equal); third prize, W. Petrie, M. C. Tuttle (equal). Honours—M. T. Bechtel, J. Buckham, W. H. Blanchard, D. Dewey, J. E. Duncan, Fred. Gallinough, W. T. Gilchrist, W. F. Higbee, W. D. Hammond, W. Hamilton, A. R. Howard, J. H. Johnson, W. J. Johnson, T. King, A. C. Lloyd, W. B. McMicken, H. B. Murray, W. J. Olds, W. H. Pickering, C. W.

Purcell, E. Richardson, E. Sturge, W. S. Stevenson, J. W. Tulley, P. Thwaites.

Pathology—Duncan, J., first prizeman; Alexander, T. G., second prizeman; Sturge, E., third prizeman. Honours—Bingham, J. E.; Buckingham, J.; Beattie, F. S.; Campbell, P. N.; Campbell, Andrew; Dewey, D. D.; Duncombe —; Gilchrist, W. T.; Glendinning, C. G.; Hedges, A. M.; Hopkins, F. M.; Hamilton, W.; Howard, S. R.; Hongendobler, J. O.; Henry, E. W.; Harris, W. H.; Jenkins, H. H.; King, Thomas; Lloyd, A. C.; Leech, M.; McMicken, W. B.; McQuate, T. C.; Marshall, J. W.; Medill, John; Manchester, J. W.; Murray, H. B.; Pickering, W. H.; Purcell, C. W.; Petrie, W.; Richardson, E.; Simons, S. W.; Spensley, F. V.; Smith, Charles H.; Stevenson, W. S.; Thwaites, P.; Tuttle, M. C.; Tremleth, W. B.; Waller, H. N.; Williams, F. E.

Physiology—Sturge, E., first prizeman; Jenkins, H. H., second prizeman; Purcell, C. W., third prizeman. Honours—Buckham, James; Hamilton, W.; Hedges, A. M.; Henry, E. W.; Hongendobler, J. J.; Hopkins, F. M.; Howard, D. R.; King, Thos.; Lloyd, A. C.; Manchester, J. W.; Thwaites, Percy; Trenleth, W. B.

Chemistry—Sturge, E., first prizeman; Petrie, W., second prizeman; Stevenson, W. S., third prizeman. Honours—Brown, Dewey, Jenkins, King, Lloyd, Purcell.

The presentation of medals and prizes followed. If one might judge from the applause with which the medallists and others were greeted, the students as a whole are well pleased at the result of the examinations.

Addresses to the Students.

At the conclusion of the presentation of the prizes the chairman called on Dr. Daniel Wilson to address the students and their friends.

Dr. Wilson said he was pleased to be present at another annual presentation of prizes to the students of the Ontario Veterinary College. The fact that this college stands at the head of similar institutions on this continent must be gratifying not only to the citizens of Toronto, but also to Canadians at large. He was glad to see the hearty, whole-souled way in which the students greeted the announcement of the names of the medallists and others. He was sorry to say that there were those who advocated doing away altogether with prizes in colleges on the ground that such a practice leads to jealousies and heart burnings. But their contentions had little foundation in fact, as was shown by the hearty applause of the students as the names were announced.

Ald. Frankland spoke at some length, impressing on the students the importance to the country of such men as they. There was a grand future for stock-raising on this continent, and they looked to the veterinary surgeons more than to any others to make it a success.

Ald. Dodds also made a few appropriate remarks.

Mr. Carpenter, on behalf of the students, then presented Dr. Smith with a magnificent picture of the graduating class.

Dr. Smith replied in suitable terms, after which short addresses were delivered by Mr. Ira Morgan, President of the Agricultural and Arts Association; by Dr. A. O. F. Coleman, of Ottawa; and by Dr. W. Cowan, of Galt.

ROYAL AGRICULTURAL SOCIETY.

At the Monthly Council, held on May 2nd, Sir John Thorold (Chairman) stated that the Committee recommended that Mr. Frank Low, M.R.C.V.S., of Norwich, be appointed Provincial Veterinary Surgeon for the County of Norfolk to supply an existing vacancy.

Professor BROWN had presented the following report:—

PLEURO-PNEUMONIA.—During the three weeks ending April 21st there were thirty outbreaks of Pleuro-pneumonia reported in Great Britain. Thirteen of these were in England and seventeen in Scotland. The number of cattle attacked was 163, of which eighty-five were in England and seventy-eight in Scotland. From the published returns it appears that under the Slaughter Order of March 6th, 1888, there were, during the above-mentioned period, 943 healthy cattle, which had been in contact with the diseased, slaughtered on, or removed for slaughter from, the infected premises.

SWINE FEVER was, during the first three weeks of the past month, more prevalent than for some time past, but less so than during the corresponding period of last year. In the period mentioned above there were 311 outbreaks reported, as compared with 467 last year. The number of swine attacked was 1,750. Of these 824, or less than half, were killed, 611 died, and eighty-nine are said to have recovered.

ANTHRAX.—Twenty outbreaks have been reported during the three weeks above referred to, and fifty-one animals attacked. Thirteen of the outbreaks were in England and seven in Scotland, while of the animals attacked thirty-nine were in England.

Lord EGERTON OF TATTON reported that the joint deputation from the Society and the Royal Veterinary College, appointed at the last meeting of the Council, had had an interview with the Lord President and the Home Secretary on April 24th. His impression was that the Home Secretary was, in the first instance, the person to decide the meaning of the word "experiment" under the Act. He thought the Home Secretary seemed desirous, if possible, to find a loophole for the veterinary surgeons if the latter would avail themselves of it. The question was, "When does an experiment cease to be an experiment?" The Home Secretary had so far enlarged the answer he had given to his (Lord Egerton's) letter as to say that an operation would cease to be called an experiment when there was a *bona fide* desire to benefit the animal without any belief or knowledge one way or the other. But the great difficulty seemed to be that the head of the Agricultural Department continued to regard his operations for Swine Fever as "experiments," whereas, if veterinary scientists would only drop scientific words and not use words that brought them under an Act of Parliament, but simply treat pigs, it seemed to him that by the consent of the Home Secretary this difficulty might be got over. It was suggested by the Lord President that a legal decision should be obtained in a court of law. But whereas there was a reasonable amount of unanimity about the means to be adopted, yet, having regard to the wording of the Act, veterinary surgeons were not prepared to say in court that this treatment of Swine Fever was not an experiment. Could Professor Brown, having heard what the Home Secretary said, recommend veterinary surgeons to adopt in the country this treatment for Swine Fever, which he was so anxious should be carried out?

Professor BROWN said that the word "experiment" stood altogether undefined in the Act, as he had pointed out to the Home Secretary, and, until an authoritative decision on the subject had been obtained in a court of law, nothing could be done. Where a man treated an animal for the benefit of that animal, that was not an experiment in the scientific sense; but where he sacrificed a particular animal, not caring about its life, nor wishing to benefit it, that distinctly was an experiment. He had also pointed out that, as the Act stood, everything which was done without a distinct knowledge of what the result would be—everything that was done for the purpose of trying something—was an experiment. So long as a veterinary surgeon, acting under his (Professor Brown's) direction without having any clear certainty of the result (possibly only a certain amount of hope), rendered

himself liable to proceedings by the Anti-Vivisection Society, or by any sensitive person who happened to stand by at the moment of the operation, he was quite certain that no practitioner would incur the risk.

Mr. DENT was very glad to find that the views of Professor Brown as to the advisability of deciding the matter in a court of law had received the endorsement of the Lord President, because he did not think the difficulty would ever be got over without a prosecution. He thought the Agricultural Department ought to instruct Professor Brown, if he had this belief in the excellence of his preventive measures, to put them into force, and that they ought to bear the expenses of any prosecution that might arise. He would even go further, and say that if the Government would not perform that duty, he thought that this Society might very well undertake it. He held that it was really and truly the duty of the Department to try any reasonable remedy for Pleuro-pneumonia before they forced local authorities to the slaughtering not only of diseased animals, but of healthy animals which had been in contact with them.

Earl SPENCER said that, as far as he could see in regard to this matter, it was on one side a matter of conscience on the part of the veterinary surgeons. It appeared to him that the Government could hardly be expected to be responsible for any number of prosecutions that might arise throughout the country. This showed the necessity of having these experiments conducted in a scientific way, where they could be done as experiments. Professor Brown had been trying experiments on swine. He imagined that there could be no difficulty in getting licenses for veterinary surgeons in different parts of the country to carry out these experiments. They might properly be undertaken by the Government, or the Treasury might advance a sum of money to the Department to get them tried in a proper manner.

Colonel KINGSCOTE ventured to say, as one of the deputation, that anything more unsatisfactory than the outcome of it could not possibly be. He could not agree with Mr. Dent that this Society should undertake to defend any prosecutions that might be taken against persons performing inoculation experiments. The Government might have taken another view, and got the word "experiment" altered in the Act. He really thought that, if veterinary surgeons were to have any help, the Home Office should give them leave and license to carry out these experiments.

Professor BROWN, in reply to Lord Spencer, said that for some time he had had a license, and he could not therefore himself be prosecuted. There were certain districts where the local authorities did not slaughter the swine. He desired to select about six of these districts, and give the inspector of the district instructions to carry on the experiments. Everyone would say they were to try something new, and wherever the word "try" was used it meant an experiment. He had been told that he would not be justified in employing any assistants who were not licensed, and it was on that ground that Professor Penberthy had been threatened with prosecution. After what Lord Spencer had said, he had not the slightest objection to make out a list of persons and apply for licenses for them, in order that they might carry on the work without risk, and he would take steps in the matter immediately.

Reviews.

QUARTERLY REPORTS UPON THE EQUINE DISEASES OF THE PRUSSIAN ARMY. L. SCHUMACHER. (Berlin, 1887.)

We greatly regret that the increasing demands upon our columns will not permit a more thorough review of these interesting reports, so we must content ourselves with drawing attention to some of the points in them which have struck us as being of special interest. We should have liked to be able to draw some comparison between the percentage of sick, etc., of the Prussian army horses with our own, but as no return is given of the total strength in horses for the year 1887, we have not the means ready to hand. The records would be more valuable from a statistical point of view if this omission were remedied. We notice that in some respects the Prussian classification of diseases differs from ours; for instance, we find Glanders, Leukæmia, Acute Rheumatism, and poisonings put under the head of general diseases.

Under Glanders five cases are reported for the year, four of which were destroyed and one cured. Of the four destroyed, two were found on *post-mortem* examination to be unaffected. The case "cured" is stated to have been undoubtedly one of Glanders; it is, therefore, not without a vague feeling of admiration that we draw attention to it. We have also another feeling which is not vague, but need not be mentioned. We now pass on until we come to Strangles. Under this heading an outbreak of an interesting character is recorded, with some valuable remarks by Dr. Schutz, of the Berlin Veterinary School. He says: "Strangles, particularly in old horses, may partake of the character of an epizootic infectious Sore Throat, without attacking the membrane of any other part. In these cases the behaviour of the lymphatic glands is not constant; sometimes they suppurate, at others they do not. The latter form of the malady is almost invariably mistaken for primary infectious Laryngitis." Dr. Schutz's opinion is supported by our own repeated experience. Thus, quite recently, a patient suffering from Strangles was by mistake put into a box near one occupied by a perfectly healthy pony which, owing to lameness, had been confined for three weeks previously. Shortly afterwards the pony developed feverish symptoms, with Sore Throat, and had a purulent discharge from the nose. In the discharge we detected streptococci. The man attending the pony also looked after a colt, which was quite healthy, and isolated from all other horses. Very soon this animal developed ordinary Strangles. We may add that the man never in any way came in contact with the original case. In the pus of all the cases streptococci were found, but as we have not yet concluded the examination of them, it is safer to leave the question of identity open for the present.

Poisonings.—Under this heading Veterinary Surgeon Straube reports the following:—He had read a "Contribution to the Medical Treatment of Roaring," by V. Levi and V. Chelchowski, and decided to employ their method, which consists in the daily administra-

tion by intra-tracheal injection of a 1 per cent. solution of strychnia, increasing the dose gradually until it reaches 15·0. By this means the authors claim to have cured a case of Roaring in thirteen days. The treatment was carried out until the seventh day, when the patient received 10 grammes, but when on the eighth this dose was repeated, symptoms of poisoning developed. The eyes of the patient were drawn upwards, it nodded its head constantly, trembled, and if a sudden noise was made it sprang nearly into the manger. The respiration was accelerated, and the body covered with perspiration. At a later period the horse fell and was seized with cramps. A solution of 0·1 of atropin was injected, and the paroxysms ceased for a few minutes—sufficiently long to allow the horse to be raised and supported. In a quarter of an hour fresh cramps necessitated a further injection of atropin, with satisfactory result. Next morning, beyond very slight twitchings, the horse was better, but the nervousness remained for several days. The reporter has no doubt that in recent cases the remedy has good effect, and states that in the one recorded improvement took place. He, however, suggests the necessity for care, because strychnine is a cumulative poison.

Colic.—During the five years ending 1887, there were 4,691 cases recorded; of these, 421 died—an average of 8·91 per cent. of those attacked.

Microbic Skin Disease. — Nineteen horses in a transport battalion were attacked with inflammatory skin disease, accompanied with obstinate ulceration, but without lymphatic symptoms. The following is a condensed report of one case. On the 20th June an ulcer of the size of a sixpence was noticed on the front of the lower joint of a hind leg; the edges were irregular, but not thickened. The bottom of the sore was reddish-grey, and covered with projecting granulations. These were tender and bled easily. There was a discharge of a considerable quantity of clear fluid. The ulcer increased to the size of a shilling. Later on a similar place was noticed on the skin of the fetlock of the other leg. In this one a small sinus was observed, from which, when pressed, a small, hard, yellowish grey mass protruded. This sore also grew in size. In consequence of a wound on the skin of its off fore leg, another horse became infected, and the ulcer grew to the size of a plate. The disease spread until seventeen more horses were attacked. Carbolic acid, iodoform, corrosive sublimate, and zinc produced no good results. In six cases scraping and actual cautery was tried, but in a few days the granulations cropped up again. The ulcers were ultimately cured with plumb. nitricum dressings. Microscopical examinations of the sloughs and granulations showed the presence of great numbers of cocci, isolated and in small masses. The white-blood and pus cells in the discharge were mostly completely invaded. Cultivations on sterilised media have been undertaken, but the investigation is not yet terminated, and will be reported upon later. Before we leave these records for the present, although the interesting cases are by no means exhausted, we desire to offer our thanks to our colleague, Professor Dr. Schutz, for their perusal.

REPORT OF OBSERVATIONS OF INJURIOUS INSECTS AND COMMON FARM PESTS. By E. A. ORMEROD. (London: Simpkin, Marshall and Co.)

The talented lady who has rendered agriculture so much service, by making a special study of the insects which prove so hurtful to plants and farm animals, has issued her report of observations for 1887. That year, owing to the prolonged heat and drought, was characterised by an unusual amount of various kinds of crop insects, and consequently there was much damage caused by their presence. The report has special reference to these, as might be expected. Veterinary surgeons will be more interested in the second part, which is devoted to a consideration of some of the insects that cause annoyance and injury to animals—*i.e.*, the ox and horse warbles, the ox gadfly, and the sheep's nostril-maggot. These are described and figured, and the measures necessary for protecting horses and cattle from the attacks of the flies are mentioned as simple and certain.

HOW TO PLAY THE FIDDLE. By H. W. and G. GRESSWELL. (London: W. Reeves.)

A notice of a work on the "queen of instruments" would, under ordinary circumstances, be altogether beyond the scope of the JOURNAL; but the production of a treatise on this subject by those connected with our profession is such an extraordinary circumstance, that we venture to bring it to the notice of those of our readers who may be desirous of learning, by means of well-written hints, how to manage one of the most difficult of musical instruments. Messrs. Gresswell have produced a very interesting and instructive little manual at the small charge of one shilling, containing more information than we have found in more pretentious, and certainly very much more expensive books. Indeed, the directions are so good that, with a little help from a teacher, any person of ordinary intelligence and application should make sound and rapid progress if he followed them. The best works have been consulted in preparing the little book, of which this is a second edition; and the greatest living master of violin playing—Herr Joachim, to whom it is dedicated—gives it its due meed of praise.

Parliamentary Intelligence.

House of Commons, May 1st.

LONDON CAB HORSES.

MR. H. VINCENT asked the hon. member for the Knutsford Division of Cheshire if the attention of the Metropolitan Board of Works had been directed to the evidence reported to have been given at Wandsworth Police-court on the 25th ult., by Mr. Humphreys, described as one of the inspectors under the Board, in the case in which the Royal Society for the Prevention of Cruelty to Animals prosecuted, that it was not cruelty to work a horse with Chronic Navicular Disease in a four-wheeled cab, and to his statement, when the learned magistrate took a contrary view and convicted the prisoner, that half the cab horses in London were in that condition; what duties Mr. Humphreys

was employed by the Board to discharge; and on what authority he made the allegation in question.

Mr. T. Egerton said that Mr. Humphreys was one of the veterinary inspectors appointed by the Metropolitan Board under the Contagious Diseases (Animals) Act, his duties being to report on all cases of diseased animals brought under his notice. All the inspectors appointed under the Act were properly qualified veterinary surgeons, who also carried on business on their own account. Mr. Humphreys appeared at the Wandsworth Police-court as a witness on behalf of a cab owner whose horses were under his professional care, and gave evidence, not as representing the Board, but in his individual capacity as a veterinary surgeon. In justice to Mr. Humphreys, it must be stated that he denied having made the direct statement as reported.

May 11th.

CONTAGIOUS PLEURO-PNEUMONIA.

Mr. Hozier called attention to the increase of Pleuro-Pneumonia in cattle, and moved that no Committee of Inquiry into the subject would be satisfactory which was not specially empowered to conduct practical experiments with the view of ascertaining the value of inoculation.

Dr. Farquharson supported the motion, and the discussion was continued by Sir A. Campbell, Mr. Esslemont, Sir R. Paget, Mr. Barclay, Mr. M. Stewart, and Mr. C. W. Gray.

Mr. Long said that the discussion which had taken place would have its due effect on the Government, but he could not on their behalf accept a resolution couched in such terms. He could not accept a resolution which would practically be to censure the Committee, even before they had reported, and he hoped the motion would not be pressed.

The House was then counted out, there being only twenty-nine members in their places.

House of Lords, May 14th.

RABIES IN DOGS.

The Earl of Carnarvon desired to trespass on their lordships' attention for a very few minutes while he put a question to his noble friend below him in regard to a much less exciting subject than that which had just engaged their attention. He wished to ask his noble friend whether Her Majesty's Government proposed to introduce any Bill or to issue any instructions for the more effectual suppression of Rabies in dogs, in conformity with the recommendations of the committee of that House who last year reported on that subject. There was one member of their lordships' House who last year was with them and this year was not with them in consequence of this mortal disease. The case was one which attracted great attention at the time. All the remedies of M. Pasteur were tried and tried early. Everything that medical skill could accomplish was done and the greatest courage was shown on the part of the sufferer, but all was absolutely in vain. A committee was appointed last year with reference to this subject, and the general conclusion at which that committee arrived was that they were prepared to accept the scientific conclusion that Rabies could only be produced by the bite of the animal and that there was no spontaneous generation of the disease. Consequently the possibility of dealing with Hydrophobia was brought within practical limits. Some countries, he might observe, had established a system of quarantine which had been completely successful.

After some remarks from Lord Stanley of Alderley,

Lord MOUNT TEMPLE was understood to express his regret that the Bill which he had presented to the House was necessarily confined to the metropolis. Whatever legislation was passed ought to extend to the whole country; and now that the Government were carrying through Parliament a great Local Government Bill greater power and improved machinery ought to be at the disposal of the new local authorities.

Viscount CRANBROOK sympathised with the views expressed by his noble friend behind him, but his noble friend would recognise that great differences of opinion prevailed and that there were many people who could not always be trusted to take proper steps or to submit to the rules laid down by authority. His noble friend had asked what the Government had done. They had issued orders under the Diseases (Animals) Act, to which dogs were now subject, giving permission to local authorities to deal with the question, of which these authorities had largely availed themselves. There had recently been a great decrease in the disease. He did not hesitate to express his own opinion that if muzzling were carried out effectively it would prove a complete remedy; but it would be almost impossible to enforce it. It was quite true that in certain countries the disease had been stamped out in this way. While in Mauritius the disease prevailed, in Réunion it had been completely stamped out, and there had been no case for years past. In a large district in Prussia a similar policy had proved successful. The Government had given powers to deal with the danger to local authorities, and he had just heard that at Birkenhead and other parts of Cheshire these powers had been employed. By the Bill now under discussion in another place the new councils would have extensive powers in this respect. He did not, therefore, think it necessary to introduce a Bill. He had before him a long list of places which had issued orders under the general authority given by the Privy Council. The Government had also, by the kind assistance of the authorities at Somerset-house, procured the endorsement on dog licenses of any symptoms of Rabies which might 'have developed themselves in dogs so licensed. This was a valuable precaution; but of course it was useless with regard to sheep dogs, hounds, and a variety of dogs in the case of which the license was not for each particular dog but for packs or a definite prescribed number. He would remind his noble friend that the police were already authorised to deal with suspected dogs, and, as he had already stated, considerable powers were vested in local authorities.

The Earl of FEVERSHAM hoped that the Government would in a future Session see their way to increase the tax on dogs, and so endeavour to diminish the number kept. Many of the dogs kept by people were not only of no use to anybody, but were a positive nuisance. If people could afford to possess dogs throughout the year they could afford to pay a higher tax on them.

Army Veterinary Department.

Gazette, May 2nd.

Veterinary Surgeon, First-class, F. Plomley retires from the service.

May 15th.

2ND LIFE GUARDS.—Veterinary Surgeon, First-class, A. Adrian Jones, from the Veterinary Department, to be Veterinary Surgeon, vice J. A. Rostron, deceased.

Veterinary Surgeon R. Butler has arrived in England on six months' sick leave from Burmah, and Veterinary Surgeons Dwyer, Kemp, and Braddell on privilege leave from India.

Obituary.

The profession has lost one of its best friends, and, socially, one of its most representative men, by the death of Matthew Harpley, F.R.C.V.S., which melancholy event occurred on the morning of the 23rd May, the immediate cause being a fit, though he had not been well for a long time.

Born in 1830, Mr. Harpley entered the profession in 1854, having studied at the Royal Veterinary College after a pupilage with his brother-in-law, the distinguished veterinary surgeon, John Field. He was gazetted to the Royal Artillery on the 24th April, 1854, and served with that corps throughout the Crimean War of 1854-55, being present at the battles of Alma, Balaklava, Inkerman, and siege and fall of Sebastopol, as well as the actions at Bulganac and Mackenzie's Farm. For these services he received the English medal and four clasps, and the Turkish medal. He served with the same corps during the Indian Mutiny of 1857-8, and was present at the action of Pandora, the storming and capture of Meangunge, siege and capture of Lucknow, capture of Ramporedussie; receiving the medal and clasp for Lucknow, and being twice mentioned in dispatches for special services.

Returning to England, he was transferred to the Royal Horse Guards in 1860, and remained with that regiment until he was gazetted to retired pay, with the honorary rank of Inspecting Veterinary Surgeon, in April, 1885, having attained the limiting age of fifty-five years. In 1865 he was elected a member of Council of the Royal College, and in 1872-3 he served as President, his connection with the Council being continued up to his death. He was a foundation Fellow, and from 1873 to 1882 was a member of the Examining Board for England, and also from 1877 to 1882 for Scotland. For many years, and at his death, he was a Governor of the Royal Veterinary College, in which he took a great interest, and assumed an active part in its management. Since his retirement from the army, he officiated as estate manager to Lord Carrington—an appointment for which his tact and excellent business manner well fitted him.

Greatly esteemed in his regiment, and appreciated for his sterling good qualities by all who knew him, both in and out of the profession, our deceased colleague did his utmost to enhance the reputation of veterinary medicine throughout his career—in the Council Chamber and in public, evincing the deepest solicitude for its welfare up to the very last. Though he did not venture to promote its scientific objects to any extent, yet he was indefatigable in his endeavours to advance these by aiding in reforms which had that result. His services to the profession have in this and other respects been great, and his name will long be remembered as one of those who raised it from comparative obscurity, and we had almost said ignominy, to a position equal to that of the other learned professions—one of acknowledged benefit to the community, and worthy of high recognition. Higher praise could scarcely be awarded.

As a mark of respect to his memory, the Annual Dinner of the Royal Horse Guards Club, of which he was Secretary, does not take place this year.

The death of Mr. Harpley makes the sixth that has occurred among the officers—active and retired—of the Army Veterinary Department in a short time, three being of officers belonging to the Household Cavalry.

The Secretary of the Royal College of Veterinary Surgeons reports the following deaths of members of our profession. In Castle Douglas, John Irving,

M.R.C.V.S., who graduated in 1840, and Robert McConnell, who graduated in 1873. In Enniskilling, William White, a graduate of 1844.

The death is announced of M. Tombeur, Director-Professor of the Veterinary School of Santa-Catalina, Buenos Ayres. He was a graduate of the Brussels Veterinary School, and in 1882, with two Belgian colleagues, he went to South America to found the above-mentioned institution in the Argentine Republic.

The Belgian journals also report the death of M. Hugues, a distinguished Army Veterinary Surgeon, and author of a number of valuable papers on veterinary medicine, surgery, and hygiene.

Notes and News.

FECUNDITY IN PIGS.—An enterprising writer in a Norwich paper has made some rather startling computations on the subject of pig-breeding. He has discovered that, if permitted, pigs will live from fifteen to twenty years of age; that they commence breeding when they are from nine to twelve months old; and that from one pair only in ten years, allowing only six to a litter, male and female, upwards of 6,434,838 pigs would be obtained; that is to say, that if, instead of three acres and a cow, a countryman started with some acres and a pair of pigs, he might, in the course of ten years, count their progeny by millions. This is not reckoning on any out-of-the-way basis, for the gentleman shows that in Leicestershire one sow actually produced 355 pigs in twenty litters; while he mentions that at the exhibition of the Highland and Agricultural Society of Scotland a boar was shown which, although only twenty months old, was already the father of 1,466 pigs. Here, then, is wealth for the million; all you have to do is to get your two pigs at the start off, and then let them increase and multiply. While you sleep you will insensibly be becoming the owner of six million piglets!

A PROLIFIC DOG.—A very remarkable case of prolific breeding comes to hand from Dorsetshire, a gentleman living on the outskirts of Dorchester having a retriever, still alive, which has produced no less than thirty-eight puppies in three litters—the first consisting of twelve, the second fourteen, and the last, a few days ago, a dozen again!

RABID DOGS IN PARIS.—From the report of Dr. Colin to the Sanitary Council of Paris, the number of mad dogs in the French capital has recently increased in a very alarming manner. This assertion is corroborated by M. Pasteur, who says that the number of persons bitten by rabid dogs in the Department of the Seine is daily augmenting. Indeed, the number of persons treated at his laboratory during the first three months of the present year was double that of the corresponding period of 1887.

PROTECTIVE INOCULATION FOR BLACK QUARTER.—Strebel, a veterinary surgeon practising at Fribourg, Switzerland, gives the results of protective inoculation against Symptomatic Anthrax in Switzerland and Austria, in 1885. In Switzerland, the operation was performed in the Cantons of Fribourg, Soleure, Grisons, Saint-Gall, Vaud, Uri, Obwald, Glaris, and Valais. In Austria, it was carried out in the principality of Lichenstein, the duchy of Salzbourg, the Tyrol, and the Voralberg. In these different countries, it appears there were 13,952 cattle inoculated, and 35,135 non-inoculated. Of the former, 67 were attacked by the disease, or 0·48 per cent., while of the latter 759 succumbed to it, or 2·44 per cent. From these figures, it will be seen that the losses were five times greater among the non-inoculated than among the inoculated.

THE CATTLE PLAGUE IN SOUTHERN RUSSIA.—The first practical experiments with the object of effectually stamping out the Siberian plague among horned cattle and sheep were commenced at Odessa the other day by Dr. Mentchikoff and Dr. Gamalea, of the Odessa Bacteriological Station. The system pursued is that of inoculation after the manner of M. Pasteur. Forty merino sheep were inoculated with lymph of different degrees of strength. The virus obtained for the purpose of inoculation is to be administered three times in increasing quantities and strength, and the three operations are to be made within twelve days. How important it is for Southern Russia that every attempt should be made to arrest the ravages of the Siberian plague will be understood, when it is stated that in the district of Kherson alone during last year 3,000,000 sheep and 30 per cent. of the whole of the horned cattle perished from it. The loss to proprietors and peasants is estimated at upwards of £375,000.

ACCIDENT TO A MARE—A CORK LEG TO BE PROVIDED.—Mr. Bradley, of the Sheep Walk Farm in Elton, Cambridgeshire, had a valuable brown blood-mare, which was in foal, and in a meadow on his farm. One evening the mare did not come as usual to be stabled, and a search showed that she had somehow fractured her off fore leg. Mr. J. W. Gresswell, veterinary surgeon, of Peterborough, was at once sent for, and he successfully amputated the leg above the fetlock, and an hour afterwards the mare gave birth to a valuable blood-foal. Mare and foal are both doing well, and it is intended, if possible, to replace the amputated part of the leg with a cork substitute.

THE ARMY VETERINARY DEPARTMENT AT THE ROYAL ACADEMY.—Any of our professional colleagues who visit the exhibition of the Royal Academy now open, will, we feel sure, be much gratified with the beautiful statuette by Mr. Adrian Jones, 2nd Life Guards. The subject is a Red Indian on horseback, shooting a bison, and the skill with which the group is modelled, as well as the artistic pose of the figures, is very remarkable, and has, we believe, received much praise from those best qualified to judge. This is now the fourth year in which Mr. Jones has been fortunate in having his statuettes accepted for exhibition by the Royal Academy.

RABIES IN IRELAND.—For several months Rabies has been prevalent in the district of Tuam, and many persons have been bitten. In accordance with special instructions from the magistrate, the police recently made a raid on every farm in the division and shot all the dogs. This was decided upon as the only way in which the disease could be stamped out.

Correspondence.

SUBCUTANEOUS INJECTION OF SAVARY'S LIQUID ESSENCE OF MUSTARD.

M. DURIEN, veterinary surgeon of Bauquesne, Department of Somme, brought the matter before the notice of the Central Veterinary Medical Society of Paris on the 13th May, 1886. M. Durien prefers Savary's essence, on account of its uniformity of strength and facility with which it is procured. He makes one or more injections, as may be necessary, and as a vehicle uses alcohol or petroleum to 1 to 2 grammes of the essence. He finds that œdema will be produced over a square decimetre of surface, and claims for his method

that results will be obtained in ten minutes, whereas with the ordinary sinapism it takes about two hours, and even then not always successfully; that as compared with the ordinary sinapism the engorgement is as intense, but less painful and more lasting. To use his own words: "I would particularly draw your attention to this point, that in more than twenty cases I have only once found that an abscess supervened, and in this case I repeated the injection at a short interval; but cicatrisation took place very rapidly, and left no traces. I have performed the operation in all regions, but find it preferable to do so where the skin is thin."

The advantages M. Durien claims are:—

1st. That the essence being of uniform strength, the practitioner is certain of the result.

2nd. The results are immediate, a few minutes being sufficient.

3rd. Saving in time, six sinapisms can be carried in a very small volume.

4th. Economy, the price of the essence being small.

5th. No dressings are necessary.

M. Durien employs the essence of mustard in the following regions for the following diseases:—

1st. In the neck in cases of Vertigo or Ophthalmia.

2nd. In the chest and sides for heart-disease and pulmonary affections.

3rd. In the abdomen for Typhoid Fever, Enteritis, Colic, etc.

4th. In umbilical hernia round the circumference of the tumour, the hernia being reduced in two cases about the tenth day.

M. Cagny uses essence of mustard subcutaneously in doubtful cases of Glanders to assist diagnosis. In one doubtful case with enlargement of the sub-maxillary gland, painful swelling of the hind limbs, but without nasal discharge or ulceration of the Schneiderian membrane, he made two injections, one on each side of the chest, and in forty-eight hours the diagnostic ulcer and nasal discharge appeared. J. A. NUNN, A.V.D.

VACCINATION AS A PREVENTIVE OF CANINE DISTEMPER.

SIR,—The remarks anent the above question in the VETERINARY JOURNAL have induced me to pen a few words.

I cannot imagine that any true pathologist could be guilty of the egregious blunder of connecting human Variola with canine Distemper—there is no more analogy between the two diseases than exists between chalk and cheese. It is true that in protracted cases of Distemper, when extreme debility is present, an eruption makes its appearance, due simply to the suspension of the skin secretory functions, associated with the low state of the vitality of the surface of the body; but I defy any living pathologist to prove that such eruptive outbreak is of a variolous nature.

For many years I have successfully practised inoculation as a Distemper preventive, with material obtained from a distempered dog; but this is totally different to the introduction of vaccine lymph—indeed, not one single authentic instance can be adduced to prove that the vaccine of human Variola has prevented canine Distemper. J. WOODROFFE HILL, F.R.C.V.S.

Hastings, 15th May.

THE DUAL OFFICE OF EXAMINER AND COUNCILMAN.

SIR,—The above subject was referred to at the late annual meeting by several members, and much adverse criticism was advanced—criticisms, as they appeared to me, to be deficient in sound argument, and advanced

mainly by disaffected partisans who had had no actual opportunity of forming a correct opinion, nor possessed any experience as to how the machinery works in the Council. With the object of removing some of these misapprehensions, I think if the matter be ventilated in a becoming spirit some good may be produced.

The objections raised against the system seemed to rest chiefly on the assumption that the examiners, being members of Council, could propose and elect themselves irrespective of their fitness. To an outsider who may have had his judgment coloured by his prejudices, or who may be an idealist pure and simple, I admit it may appear to him at first sight feasible; but to the man of fair judgment, one who has not lost all faith in his fellow-man, especially in those representatives who have been chosen by the whole profession as men possessing honour and integrity, to such a one the idea would be scouted as unworthy of a moment's consideration. From the opinion I have formed, and the experience I possess, gained by close observation of its actual working inside the Council for a period of between twenty and thirty years, I have no hesitation whatever in saying that the Council select the men they consider the most suitable and best qualified for the various sections of the Examining Board, irrespective of their being members of Council or not; and, further, I have never known a member of Council influencing other members, nor to have voted in his own election for an examiner; but I have known innumerable instances of members abstaining from voting on election of examiners. Many matters are taken into our consideration when deciding on a person as an examiner, viz., his general and natural fitness; his knowledge and education; his intellectual capacity; his previous experience and training; his benevolent, kindly and patient manners; his powers of discernment, and the interest he takes in the profession; these and many other points are taken into our earnest and careful consideration. And I must also say that those members of our Council who are also examiners, are some of the best, if not the very best, members. They are the most regular in attendance, being thoroughly conversant with every matter that comes before the Council; they always take a deep interest in joining in the debates and assisting in elucidating every matter appertaining to the interests of the profession, besides their invaluable service in being referred to on examination matters; in short, they are the most useful members of the Council, and the Council cannot spare them. I think the general meeting confirmed this view, when about fifty were in favour of the dual office and about seven against it; and the emphatic answer given by the whole profession in re-electing Dr. Fleming (who, as every member of the profession knows, holds the dual appointment) by a larger number of votes than was ever recorded to a member of Council before, and nearly 100 votes more than was given him at his last election, surely this should be a convincing and satisfactory answer to everybody, unless they be hopelessly disaffected.

THOMAS GREAVES, F.R.C.V.S.

Manchester.

MR. GREAVES' COURT OF APPEAL.

SIR,—If I have hurt the feelings of your correspondent, a (nameless) F.R.C.V.S., by criticising the actions of the Council of the R.C.V.S., and by expressing the opinion that the Council and Examining Boards should be separate and distinct, I hope the injury done to him will only be of a temporary nature, because those gentlemen in the Council "possessing any feeling of self-respect" will not object to legitimate criticism of their labours on behalf of their professional brethren, and I do not doubt that in a few

years the profession will demonstrate that it is wrong in principle for an examiner to hold a seat at both the Council and Examining Boards.

Your correspondent is aggrieved because he has attended so many annual meetings and has never heard a vote of thanks proposed for the Council. Why has "F.R.C.V.S." never made the proposal, and thereby have atoned, to a certain extent at least, for his and our shortcomings? This could not have been more ridiculous than for a member of Council to propose and vote for himself as an examiner.

The last sentence in the paragraph relating to me, is unworthy of either a member of Council, an examiner, or a gentleman, and therefore I decline to take any notice of it. H. KIDD, F.R.C.V.S.

Hungerford, 11th May, 1888.

[We have had considerable experience of Council business for many years, and can assert that we have never known a member of Council to propose and vote for himself as an examiner. It is evident that the profession generally prefer examiners on the Council. The advantages of their being present at the meetings far outweigh any disadvantages, if such exist. So long as teachers are members of Council, it is most essential that examiners should be also; the experience of last year fully demonstrates this.—ED. *V.J.*]

LANCASHIRE VETERINARY ASSOCIATION.

THE usual quarterly meeting of this association will be held at the Medical Institute, Hope Street, Liverpool, on June 13th. Tea at 5 o'clock. Business at 6 o'clock.

A number of communications are held over until next month, owing to pressure on our space.

Communications, Books, Journals, etc., Received.

COMMUNICATIONS have been received from S. Villar, Harrow; E. Clarke, London; Kay Lees, A.V.D., Newbridge; T. Assheton Smith, Calcutta; F. Smith, A.V.D., Aldershot; J. A. Nunn, A.V.D., Natal; A. J. Haslam, A.V.D., India; A. E. Macgillivray, Banff; J. W. Hill, Hastings; W. Greenhalgh, Leeds; W. Penhale, Barnstaple; J. Webb, Bishop Stortford; F. C. Mahon, Darlington; H. Kidd, Hungerford; J. T. Duncan, Ontario; A. W. Hill, London.

BOOKS AND PAMPHLETS: *C. Gresswell*, History of the English Thoroughbred; Bulletin et Memoires de la Société Centrale de Méd. Vétérinaire; Bulletin des Séances de la Société Nationale d'Agriculture; Report of the Minister of Agriculture for the Dominion of Canada; *W. R. Williams*, The Principles of Cancer and Tumour Formation; *F. S. Billings*, The Southern Cattle Plague of the United States.

JOURNALS, ETC.: *La Clinica Veterinaria; Der Thierarzt; Repertorium der Thierheilkunde; Recueil de Médecine Vétérinaire; Wochenschrift für Thierheilkunde und Viehzucht; Journal of the National Agricultural Society of Victoria; Revue Vétérinaire; Echo Vétérinaire; Giornale di Veterinaria Militare; American Live Stock Journal; Lancet; Edinburgh Medical Journal; Live Stock Journal; Mark Lane Express; London Medical Record; Hufschmied; Medical Press and Circular; Annales de Méd. Vétérinaire; Journal de Méd. Vétérinaire et Zootechnie.*

NEWSPAPERS: *Peterboro' Express; Times; Scottish Leader; Scotsman; Leeds Mercury.*